

SLAUGHTERING AND MEAT PACKING.

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GENERAL STATISTICS.

Scope of the industry.—The slaughtering and meat-packing industry includes establishments engaged in slaughtering and meat packing, wholesale. It does not include data for retail establishments, nor for those engaged exclusively in the manufacture of sausage or in the killing and dressing of poultry. The operation of plants whose chief business was slaughtering for the retail trade, but who also disposed of considerable quantities of products at wholesale, were intended to be included, and the reports for such establishments ordinarily covered both their wholesale and retail operations. Establishments included in the industry at one census might, on account of changes in the character of their business, be omitted at another census, and even at the same census plants of identical characteristics may have been treated differently by the special agents in different sections of the country. The statistics for the industry, however, may be accepted as representing practically all important establishments engaged wholly or chiefly in slaughtering and meat packing and in slaughtering for the wholesale trade.

The report distinguished two classes of establishments: (1) Those whose chief products are fresh and cured meats, classed as "slaughtering and meat packing," and (2) those whose chief products are fresh meats, classed as "slaughtering." In compiling the statistics each establishment was assigned to one of the two groups according to its product of chief value. A very large number of the establishments engaged in curing meats also slaughter and, although all establishments classed as "slaughtering" are those that have fresh meat for their product of chief value, some of them do a limited amount of packing. The first group includes establishments that cure meat only and do not slaughter, and the second group includes abattoirs that slaughter for custom only.

So many establishments engage in both branches of the industry that the overlapping of products makes it advisable to present the totals for the combined industries only, in all the tables, except where otherwise stated.

The figures regarding cost of materials and value of products in the various tables contain a considerable amount of duplication. Those establishments, for example, which are engaged in meat packing only, use as materials the fresh meat produced by the slaughtering branch of the industry. Dressed meat valued at \$124,334,692 was reported in 1914 as among the materials purchased by the establishments in the industry. This may be said to represent approxi-

mately the amount of duplication involved in cost of materials and value of products as reported for the combined industry. In the statistics of "value added by manufacture" this duplication is almost entirely eliminated.

Summary for the industry.—In its operations, from the herds on farms and ranges to the delivery of fresh and cured products to the householders, the industry gives employment to many thousands and utilizes a vast capital. The branch covered by this report ranked first in value of products among the manufactures of the United States in 1914 and at every previous census since 1879 except that of 1899, when it ranked second.

The growth of the industry since 1849 has been almost phenomenal. The settlement of the western country and the consequent expansion of territory devoted to stock raising; the extension of railroads and the increased facilities for communication; the improved methods of preserving and curing meats; the introduction and improvement of mechanical and chemical processes of refrigeration; sanitary equipment; the utilization of every part of the animal; the adoption of labor-saving machinery; and the rigid inspection of meats to safeguard the health of the consumer are among the factors that have contributed to its growth.

Table 1 summarizes the statistics for the industry for each census from 1849 to 1914, inclusive. At the census of 1849 the designation of the industry was "pork and beef packing," and at the census of 1859 it was "provisions." In 1869 the statistics were collected under four headings, namely, "meat packed, beef," "meat packed, pork," "meat cured and packed, not specified," and "butchering," while the designation used in 1879 was "slaughtering and meat packing, not including retail butchering." In 1889 and subsequent censuses separate figures were secured for "slaughtering and meat packing, wholesale," and "slaughtering, wholesale, not including meat packing."

The designation "slaughtering and meat packing" in this report covers the two classes of establishments for which separate statistics were published in 1909 and at the three preceding censuses. Even a cursory examination of the designations applied to the industry at successive censuses makes evident the fact that different classes of establishments were included at different census periods, although the figures from 1889 to 1914 are fairly comparable.

The financial statistics for 1869 are given in currency, which at that time was worth only about 80 cents gold

to the dollar. For strict comparability, therefore, the figures for that year should be reduced about 20 per cent.

Table 1

CENSUS YEAR.	Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Expressed in thousands.				
1914.....	1,279	98,832	\$534,274	\$62,136	\$1,441,663	\$1,651,965	\$210,302
1909.....	1,221	87,813	378,319	50,401	1,101,438	1,355,544	164,106
1904.....	929	74,134	237,715	40,327	805,857	913,915	108,058
1899.....	882	68,386	188,800	33,392	682,097	783,779	101,682
1889.....	1,118	43,975	116,888	24,305	482,962	561,612	90,650
1879.....	872	27,297	49,419	10,509	267,730	303,562	35,823
1869.....	768	8,366	24,225	2,553	67,674	75,827	14,153
1859.....	259	5,658	10,158	1,019	28,564	29,442	5,878
1849.....	185	3,276	3,483	1,232	9,451	11,982	2,531

As previously explained there has been some lack of uniformity in the class of establishments reported at

the different censuses, and, therefore, the number of establishments is not an indication of development in this industry. The growth of the industry is shown by the number of wage earners, wages, cost of materials, and value of products reported at each succeeding census.

Table 2 summarizes the statistics of establishments engaged in slaughtering and meat packing for each census from 1889 to 1914, and gives percentages of increase.

The figures for the five censuses covered by Table 2 are more directly comparable than those for preceding censuses. With the exception of a slight decrease in the number of proprietors and firm members and in the amount paid for contract work during the five-year period ending with 1914, all of the items show increases during each of the three five-year periods.

Table 2

	NUMBER OR AMOUNT.					PER CENT OF INCREASE. ¹			
	1914	1909	1904	1899	1889	1909-1914	1904-1909	1899-1904	1889-1899
Number of establishments.....	1,279	1,221	929	882	1,118	4.8	31.4	5.3	-21.2
Persons engaged.....	121,729	105,971	87,077	(2)	(2)	14.9	21.7		
Proprietors and firm members.....	1,157	1,170	969	(2)	(2)	-1.1	20.7		
Salaried employees.....	21,740	16,988	11,974	10,199	(2)	28.0	41.9	17.4	
Wage earners (average number).....	98,832	87,813	74,134	68,386	43,975	12.5	18.5	8.4	55.5
Primary horsepower.....	253,066	202,432	115,956	85,008	46,640	25.0	74.6	36.4	82.3
Capital.....	\$534,273,563	\$378,319,045	\$237,714,690	\$188,800,181	\$116,887,504	41.2	59.1	25.9	61.5
Salaries and wages.....	80,696,745	70,122,766	53,670,874	43,493,900	28,841,576	27.9	30.7	23.4	50.8
Salaries.....	27,561,023	19,718,312	13,343,902	10,101,647	(2)	39.8	47.8	32.1	
Wages.....	62,135,722	50,404,454	40,326,972	33,392,253	(2)	23.3	25.0	20.8	
Paid for contract work.....	278,421	414,520	101,343	(2)	(2)	-32.8	309.0		
Rent and taxes (including internal revenue).....	4,411,135	3,121,767	1,586,808	(2)	(2)	41.3			
Cost of materials.....	1,441,662,658	1,191,438,076	805,856,969	682,096,839	480,962,211	21.0	47.8	18.1	41.8
Value of products.....	1,651,965,424	1,355,544,431	913,914,624	783,779,191	561,611,668	21.9	48.3	16.6	39.6
Value added by manufacture (value of products less cost of materials).....	210,302,766	164,106,355	108,057,655	101,682,352	80,649,457	28.2	51.9	6.3	26.1

¹ A minus sign (-) denotes decrease.

² Figures not available.

³ Exclusive of internal revenue.

The decrease in the number of proprietors and firm members is due to the decrease in the number of small establishments operated by individuals or firms and also to the fact that some establishments of this class were incorporated during the period between the two censuses. In such cases the classes reported as proprietors or firm members at one census would be returned as salaried employees at a subsequent enumeration.

The amount paid for contract work depends upon business methods, and the decrease is no indication of a decrease in the magnitude of the operations.

There were 54,857 more wage earners employed in 1914 than in 1889, and during this period the amount paid in salaries and wages increased \$60,855,169, or 211 per cent; the cost of materials, \$960,700,447, or 199.7 per cent; and the value of products, \$1,090,353,756, or 194.1 per cent.

Table 3 distinguishes the two branches of the industry and presents a summary of the statistics for 1914, 1909, and 1904 with percentages of increase for the decade.

There was a comparatively even growth during the decade in both branches of the industry in cost of

materials, value of products, and value added by manufacture, as shown by the percentages of increase for these items, but decided differences in all other items given.

In the slaughtering and meat-packing branch there was a growth in value of products of \$652,738,751 in the ten-year period, and of this amount \$402,491,441 was during the first five years, 1904 to 1909. This result is not to be confused with the value added to materials by manufacture—that is, the value of products less the cost of all materials—which amounted to \$186,742,474 in 1914, an increase as compared with 1904 of \$91,215,406, or 95.5 per cent.

Of the 1,279 establishments reported for 1914, 649, or 50.7 per cent, were engaged in slaughtering and meat packing, and these employed 91.5 per cent of the total number of wage earners and their products formed 88 per cent of the total value of products for the entire industry. Both branches of the industry were operating in all states except Idaho, New Mexico, South Dakota, and Wyoming, where all establishments reporting were engaged in slaughtering and meat packing, and in Arizona, Arkansas, Louisiana, Mississippi, North Carolina, and South Carolina, where all were engaged in slaughtering.

Table 3

	ESTABLISHMENTS ENGAGED PRIMARILY IN—							
	Slaughtering and meat packing. ¹				Slaughtering. ²			
	1914	1909	1904	Per cent of increase 1904-1914.	1914	1909	1904	Per cent of increase 1904-1914.
Number of establishments.....	649	656	559	16.1	630	565	370	70.3
Persons engaged.....	110,888	97,476	81,389	36.2	10,841	8,495	5,688	90.6
Proprietors and firm members.....	492	478	491	0.2	665	692	478	39.1
Salaried employees.....	10,974	15,603	11,305	76.7	1,766	1,385	669	164.0
Wage earners (average number).....	90,422	81,395	69,593	29.9	8,410	6,418	4,541	85.2
Primary horsepower.....	226,521	184,624	106,621	112.5	26,545	17,808	9,335	184.4
Capital.....	\$484,598,634	\$343,636,900	\$219,818,627	120.4	\$49,706,929	\$34,062,145	\$17,896,063	177.8
Salaries and wages.....	89,775,155	63,589,431	49,548,731	63.0	8,921,590	6,533,335	4,122,143	116.4
Salaries.....	24,951,059	17,849,395	12,458,332	100.3	2,609,904	1,866,417	885,570	194.7
Wages.....	55,824,096	45,739,536	37,090,399	50.5	6,311,626	4,666,918	3,236,573	95.0
Paid for contract work.....	161,123	321,462	14,619	1,002.1	117,298	93,058	86,724	35.3
Rent and taxes (including internal revenue).....	3,076,334	2,508,202	1,190,483	208.8	734,501	615,565	396,325	85.4
Cost of materials.....	1,207,753,414	1,059,236,121	706,230,069	79.5	173,909,244	132,201,955	99,626,900	74.6
Value of products.....	1,454,495,888	1,204,248,578	801,757,137	81.4	197,469,536	151,295,853	112,157,487	76.1
Value added by manufacture (value of products less cost of materials).....	186,742,474	145,012,457	95,527,068	95.5	23,560,292	19,093,898	12,530,587	88.0

¹ Includes establishments engaged in meat packing only.² Includes establishments engaged in custom slaughtering only.

Of the 649 establishments engaged in slaughtering and meat packing, 181 did no slaughtering, their entire product consisting of cured meats. Of the 630 engaged in slaughtering, 33 were custom abattoirs in which animals were slaughtered for others, including both the wholesale and retail trade. The value of products of these abattoirs represents the amount received for service rendered in cash or its equivalent in offal, hides, etc. The methods of operating the establishments engaged in curing only and those doing only custom slaughtering differ so materially from those prevailing in other establishments in the industry that the statistics for these are presented separately in Tables 4 and 5.

Table 4 shows statistics for those establishments engaged in curing meat, but which did no slaughtering, for 1914 and 1909. The first census at which data for this class of plants were collected was in 1909.

Table 4	ESTABLISHMENTS ENGAGED IN CURING ONLY.		Per cent of increase, 1909-1914.
	1914	1909 ¹	
Number of establishments.....	181	159	13.8
Persons engaged.....	6,659	6,081	9.5
Proprietors and firm members.....	187	159	5.0
Salaried employees.....	1,387	1,164	19.2
Wage earners (average number).....	5,105	4,758	7.3
Capital.....	\$23,210,909	\$18,236,059	27.3
Salaries and wages.....	4,944,178	4,123,834	19.9
Salaries.....	1,705,691	1,299,610	31.2
Wages.....	3,238,487	2,824,224	14.7
Cost of materials.....	53,098,330	45,094,837	17.7
Value of products.....	65,164,466	56,212,973	15.9
Value added by manufacture (value of products less cost of materials).....	12,066,136	11,118,136	8.5

¹ Includes one establishment engaged in custom curing.

The 181 establishments reported in 1914 as engaged primarily in curing meat not only cure the various cuts of beef and pork, but also render lard, can meats and meat products, manufacture lard compounds, sausage, and numerous other products. These establishments were in operation in 22 states and the

District of Columbia. The most important among these states was Illinois with 6 establishments and a product value of \$24,730,004, and New York with 98 establishments and a product value of \$21,443,146. Other states of lesser importance but whose products were valued at over \$1,000,000 were Massachusetts, New Jersey, Pennsylvania, California, Ohio, Rhode Island, Maryland, and Missouri, enumerated in the order of the value of their products.

The table shows that the operations of these establishments increased quite rapidly in the five years. The cost of materials was \$8,003,493, or 17.7 per cent greater in 1914 than in 1909, and the value of products \$8,951,493, or 15.9 per cent greater.

Table 5 shows the same class of statistics as those given for the curing establishments in the preceding table, for custom abattoirs for 1914 and 1909. The latter census was the first one at which these data were secured.

Table 5	ESTABLISHMENTS ENGAGED IN CUSTOM SLAUGHTERING ONLY.		Per cent of increase, 1909-1914.
	1914	1909	
Number of establishments.....	33	31	6.4
Persons engaged.....	623	498	27.7
Proprietors and firm members.....	15	55	.....
Salaried employees.....	55	433	27.7
Wage earners (average number).....	553	433	27.7
Capital.....	\$1,540,013	\$1,196,346	28.7
Salaries and wages.....	387,368	275,887	40.4
Salaries.....	61,487	53,477	15.0
Wages.....	325,881	222,410	46.5
Cost of materials.....	152,326	136,538	231.3
Value of products.....	1,157,698	653,042	77.3
Value added by manufacture (value of products less cost of materials).....	705,372	516,504	36.6

The establishments included in Table 5 are those whose chief business is slaughtering animals for food. They do not own the animals which they slaughter; they are owned by other establishments, some of which are wholesale and are covered by this report and some are retail and not included in this report.

In addition to slaughtering, however, they do some curing, rendering, and further processing of products. The materials used are either those received for the service rendered or those purchased from establishments having the slaughtering done and are purchased at an attractive price on account of the saving of cartage, cold storage, etc. The large increase in cost of materials was due mainly to this growing feature of the industry.

It is possible that these statistics do not cover all of this class of establishments which were in operation in 1914, as the special agents in different parts of the country may have treated plants of this character differently. The operations of those reported show a gradual growth in the five-year period. The establishments were distributed through 21 states and the District of Columbia. New Jersey had the largest number of establishments and value of products and slaughtered 1,410,071 animals of the aggregate

total of 2,209,774 which were slaughtered in these establishments.

Abattoirs are largely under corporate ownership but are operated on the cooperative plan. One, located at Paris, Tex., was operated by the municipal government. This establishment was reported at the censuses of 1909 and 1914.

Summary, by states.—Table 6 summarizes the more important statistics of the industry by states, the states being arranged according to the value of products reported for 1914. Some of the states (Oklahoma, South Dakota, Georgia, and the District of Columbia), for which data can not be shown separately without disclosing the operations of individual establishments, ranked higher than some of those named in the table. In considering the rank in value of products, it should be noted that there may be more duplication reported for some states than for others.

Table 6

STATE.	Number of establishments.	SLAUGHTERING AND MEAT PACKING: 1914.										PER CENT OF INCREASE. ¹											
		Wage earners.			Value of products.			Value added by manufacture.			Wage earners (average number).			Value of products.			Value added by manufacture.			1909-1914	1909-1909	1899-1904	
		Average number.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904				
																							1914
United States..	1,279	98,832	100.0	.....	\$1,651,965,424	100.0	.....	\$210,302,766	100.0	.....	12.5	18.5	8.4	21.9	48.3	16.6	28.2	51.9	6.3			
Illinois.....	70	31,315	31.7	1	485,362,180	29.4	1	76,467,110	36.4	1	18.9	-2.3	-3.3	25.6	21.8	10.2	69.9	20.5	-9.4				
Kansas.....	26	9,884	10.0	2	151,647,123	9.2	2	15,695,580	7.5	3	-6.7	12.8	15.7	-8.3	71.6	24.5	-11.4	57.7	18.2				
New York.....	184	6,245	6.3	3	144,236,162	8.7	3	16,954,429	8.1	2	6.8	67.1	12.9	15.3	70.8	27.5	3.4	106.9	14.8				
Nebraska.....	10	5,713	5.8	4	104,503,333	6.3	4	10,330,745	4.9	4	-4.9	7.6	-8.3	13.2	33.3	-2.9	-25.9	73.4	-2.4				
Missouri.....	31	5,152	5.2	5	91,608,121	5.5	5	7,272,686	3.4	8	5	10.8	10.2	36.0	15.5	32.1	39.5	-0.7	22.2	52.3			
Iowa.....	28	4,413	4.5	7	74,171,865	4.5	6	6,398,357	3.0	10	7.0	33.6	7.0	25.9	95.9	17.0	8.8	103.8	-30.3				
Pennsylvania.....	146	3,616	3.7	8	65,191,272	3.9	7	7,586,583	3.6	7	23.0	21.8	44.6	27.6	58.1	28.1	10.6	51.2	24.7				
Ohio.....	152	3,480	3.5	10	64,960,396	3.9	8	6,663,426	3.2	9	17.0	32.9	26.7	30.5	73.3	39.0	8.3	66.0	35.6				
Texas.....	18	3,486	3.5	9	52,945,022	3.2	9	6,520,605	4.0	6	-4.2	80.2	387.7	24.5	172.3	300.1	66.4	152.5	176.3				
Massachusetts.....	46	3,233	3.3	11	51,724,520	3.1	10	6,266,181	3.0	11	5.8	6.4	4.5	21.6	14.6	17.3	24.8	30.9	7.3				
Indiana.....	65	4,481	4.5	6	51,021,537	3.1	11	4,759,426	2.3	14	1.5	40.6	-12.7	8.0	60.9	-33.1	-10.0	67.4	-39.8				
California.....	81	2,172	2.2	13	49,499,958	3.0	12	8,569,376	4.1	5	35.7	27.8	35.5	45.8	55.8	38.7	49.6	80.3	46.9				
Minnesota.....	19	2,565	2.6	12	47,535,803	2.9	13	5,944,308	2.8	12	34.9	39.6	103.9	85.6	48.1	124.4	66.7	44.4	149.9				
New Jersey.....	56	2,033	2.1	14	38,809,339	2.3	14	3,499,060	1.7	16	19.1	151.8	21.5	6.5	111.4	22.7	-3.4	132.5	30.3				
Wisconsin.....	22	2,011	2.0	15	32,180,684	1.9	15	3,643,117	1.7	15	19.6	13.4	9.0	25.2	60.0	18.1	5.5	44.8	36.2				
Michigan.....	17	1,112	1.1	18	20,665,737	1.3	17	1,851,872	0.9	20	39.9	69.5	2.9	60.9	107.4	16.0	16.6	136.8	18.6				
Washington.....	11	864	0.9	19	18,443,526	1.1	18	2,542,752	1.2	18	4.3	147.2	45.0	17.8	150.3	27.8	34.3	128.5	29.3				
Maryland.....	46	1,221	1.2	16	16,607,367	1.0	19	2,840,398	1.3	17	17.6	22.2	85.0	19.5	24.0	99.9	5.6	34.5	131.0	41.3			
Colorado.....	16	777	0.8	20	12,726,127	0.8	20	2,039,201	1.0	19	17.9	166.8	-5.4	31.8	190.5	-23.5	49.7	151.3	-13.0				
Oregon.....	14	442	0.4	21	7,488,920	0.4	21	1,284,465	0.6	21	20.8	48.8	43.0	27.3	102.3	77.5	48.6	67.3	85.3				
West Virginia.....	7	214	0.2	27	4,787,660	0.3	23	340,764	0.2	27	28.1	25.6	58.3	27.2	95.2	44.1	-10.0	45.8	27.5				
Rhode Island.....	10	190	0.2	29	4,497,456	0.3	24	339,458	0.2	28	5.6	19.2	-24.1	56.3	15.1	3.7	45.5	11.5	-15.0				
Connecticut.....	5	384	0.4	24	4,450,959	0.3	25	528,346	0.2	24	10.0	12.2	-18.2	15.7	29.4	-18.8	19.2	44.8	-41.0				
Virginia.....	21	396	0.4	23	4,362,272	0.3	26	636,798	0.3	23	15.8	116.5	276.2	-5.2	130.5	256.4	17.1	117.6	201.2				
Kentucky.....	28	223	0.2	25	4,109,409	0.2	27	438,547	0.2	25	-37.0	-25.0	-7.6	-37.4	15.3	10.0	-46.7	-25.2	50.2				
Utah.....	14	138	0.1	31	3,010,678	0.2	28	338,712	0.2	29	78.2	158.8	44.2	78.2	158.8	44.2	-6.6	161.2	104.4				
Montana.....	8	96	0.1	36	2,119,539	0.1	29	402,818	0.2	26	-8.6	.....	.....	3.3	.....	.....	48.2	.....	.....		
Tennessee.....	18	199	0.2	28	1,889,091	0.1	31	327,643	0.1	30	.....	.....	.....	-6.1	532.4	.....	-24.1	.....	.....		
Nevada.....	4	91	0.1	37	1,853,270	0.1	32	249,115	0.1	34	.....	.....	.....	.....	.....	.....	.....	.....	.....
Delaware.....	19	125	0.1	32	1,710,741	0.1	33	211,717	0.1	35	.....	.....	.....	24.7	150.4	.....	50.4	.....	.....		
Maine.....	21	115	0.1	34	1,247,441	0.1	34	210,380	0.1	36	27.8	-38.8	.....	53.0	25.8	17.0	50.0	.....	.....		
Idaho.....	9	81	0.1	38	981,115	0.1	36	266,619	0.1	33	.....	.....	.....	84.4	234.6	.....	.....	.....	.....
Florida.....	11	54	0.1	39	925,386	0.1	37	136,687	0.1	37	.....	.....	.....	98.1	.....	.....	.....	.....	.....
Alabama.....	7	122	0.1	33	703,082	(2)	38	111,482	0.1	39	.....	.....	.....	.....	119.7	.....	-8.2	.....	.....		
Louisiana.....	4	219	0.2	26	189,177	(2)	39	132,472	0.1	38	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Hampshire.....	5	18	(2)	40	178,973	(2)	40	23,500	(2)	42	.....	.....	.....	.....	129.5	.....	.....	.....	.....
All other states.....	30	1,952	2.0	.....	33,622,183	2.0	.....	6,448,031	3.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

¹ Percentages are based on figures in Table 31. A minus sign (-) denotes decrease. Percentages are omitted where base is less than 100 for wage earners, or less than \$100,000 for value of products or value added by manufacture, or where comparable figures can not be given.

² Less than one-tenth of 1 per cent.

The industry is well distributed throughout the United States, as one or more establishments were reported for all states except North Dakota in 1914.

In value of product, however, the industry is largely centralized in a few states. Illinois is by far the most important of these. In number of establishments,

however, it was surpassed by New York, Ohio, Pennsylvania, and California, but those in Illinois in general were much larger than those in any other state. In this connection it is interesting to note that the largest average value of products per establishment was in Nebraska and was \$10,450,333, while that in Illinois was only \$6,933,745. The total value of products in Illinois increased \$168,156,098 or 53 per cent, in the decade 1904-1914, and \$98,443,685, or 34.2 per cent in the preceding decade 1899-1909. The relative importance of the state in the industry, however, declined during the decade, as in 1904 its products formed 34.7 per cent of the total for the United States as compared with 29.4 per cent in 1914.

In value of products Kansas ranked second in both 1914 and 1909, though the product value was \$13,713,393 less in 1914 than in 1909. The first five ranking states, Illinois, Kansas, New York, Nebraska, and Missouri, reported \$977,356,919, or 59.2 per cent of the total output for the United States in 1914, and \$848,407,914, or 62.6 per cent in 1909. Among the

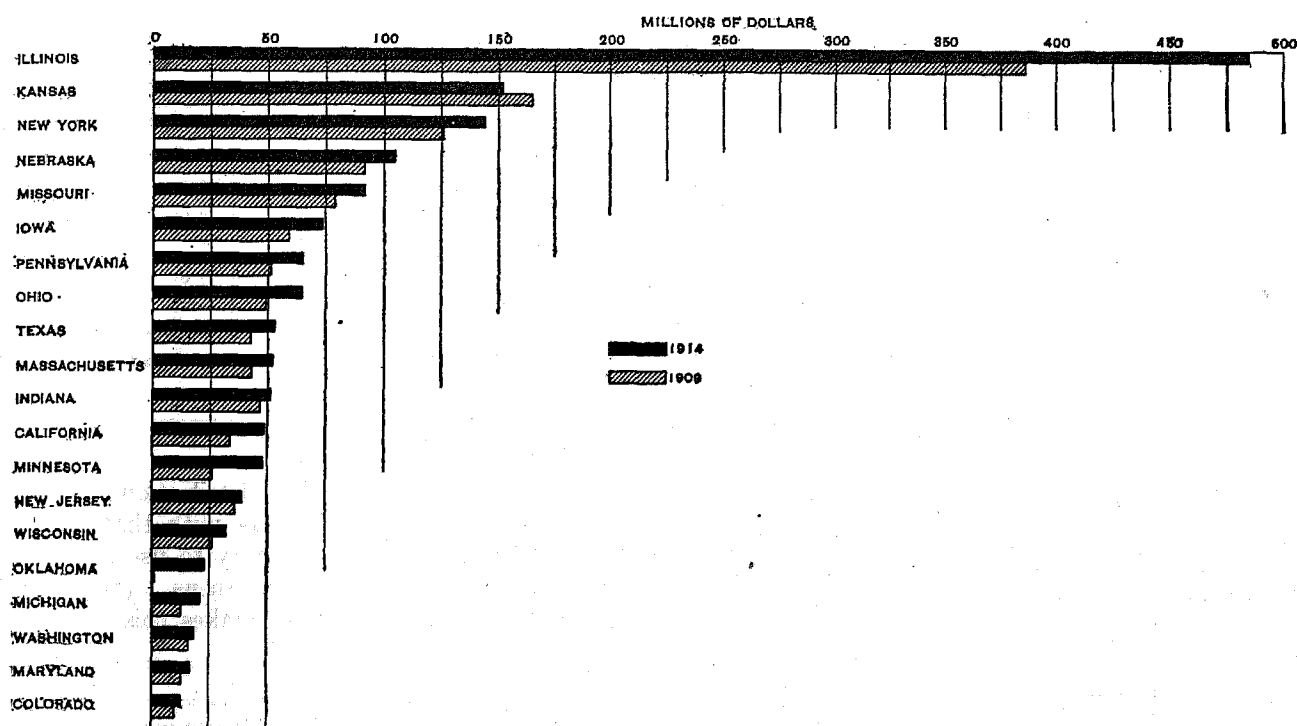
first three groups, Texas, California, and Minnesota advanced in rank, and Indiana, New Jersey, and Wisconsin declined.

Table 7 shows the value of products for the industry in five leading cities in 1914 and 1909.

CITY.	VALUE OF PRODUCTS.		PER CENT OF TOTAL FOR THE UNITED STATES.	
	1914	1909	1914	1909
United States.....	\$1,651,965,424	\$1,355,544,431	100.0	100.0
Total for five leading cities.....	710,820,350	630,768,589	43.0	46.5
Chicago.....	384,748,592	321,952,828	23.9	23.8
Kansas City.....	133,826,338	148,459,212	8.1	11.0
New York.....	107,959,229	94,693,177	6.5	7.0
Indianapolis.....	37,780,039	39,133,737	2.3	2.9
St. Louis.....	36,506,152	26,529,635	2.2	1.9
Other.....	941,145,074	724,775,842	57.0	53.5

The following diagram shows graphically the value of products, by states, for 20 leading states, for 1914 and 1909:

SLAUGHTERING AND MEAT PACKING—VALUE OF PRODUCTS FOR LEADING STATES: 1914 AND 1909.



Persons engaged in the industry.—Table 8 shows for the industry as a whole and for each of its branches, for 1914 and 1909, the number of persons engaged in the industry, distributed by sex, the average number of wage earners being distributed also by age. The sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

Of the 121,729 persons employed in the industry as a whole in 1914, 81.2 per cent were wage earners.

Very few wage earners were under 16 years of age, and the number decreased by 253, or 51 per cent, from 1909 to 1914.

Comparatively few females were employed in the industry, only 9,012 in 1914, and over two-thirds of this number were wage earners. Almost all (99.4 per cent) of the female wage earners were employed in the meat-packing branch of the industry, where deftness is required for wrapping oleomargarine, hams, etc.

Table 8

INDUSTRY AND CLASS.	Census year.	PERSONS ENGAGED IN THE INDUSTRY.					
		Total.	Male.	Female.	Per cent of total.		
					Male.	Female.	
Total for the industry.....	1914 1909	121,729 105,971	112,717 98,723	9,012 7,248	92.6 93.2	7.4 6.8	
Proprietors and officials.....	1914 1909	3,208 2,945	3,157 2,907	51 38	98.4 98.7	1.6 1.3	
Proprietors and firm members.....	1914 1909	1,157 1,170	1,129 1,151	28 19	97.6 98.4	2.4 1.6	
Salaried officers of corporations.....	1914 1909	736 696	715 677	21 19	97.1 97.3	2.9 2.7	
Superintendents and managers.....	1914 1909	1,315 1,079	1,313 1,079	2 0	99.9 100.0	0.1 0.0	
Clerks and other subordinate salaried employees.....	1914 1909	19,689 15,213	17,182 13,614	2,507 1,599	87.3 89.5	12.7 10.5	
Wage earners (average number).....	1914 1909	98,832 87,813	92,378 82,202	6,454 5,611	93.5 93.6	6.5 6.4	
16 years of age and over.....	1914 1909	98,589 87,317	92,187 81,747	6,402 5,570	93.5 93.6	6.5 6.4	
Under 16 years of age.....	1914 1909	243 496	191 455	52 41	78.6 91.7	21.4 8.3	
Slaughtering and meat packing.....	1914 1909	110,888 97,476	102,135 90,423	8,753 7,053	92.1 92.8	7.9 7.2	
Proprietors and officials.....	1914 1909	2,085 1,937	2,049 1,928	36 29	98.3 98.5	1.7 1.5	
Proprietors and firm members.....	1914 1909	492 478	471 463	21 15	95.7 96.9	4.3 3.1	
Salaried officers of corporations.....	1914 1909	530 576	517 562	13 14	97.5 97.6	2.5 2.4	
Superintendents and managers.....	1914 1909	1,063 903	1,061 903	2 0	99.8 100.0	0.2 0.0	
Clerks and other subordinate salaried employees.....	1914 1909	18,381 14,124	16,082 12,689	2,299 1,435	87.5 89.8	12.5 10.2	
Wage earners (average number).....	1914 1909	90,422 81,395	84,004 75,806	6,418 5,589	92.9 93.1	7.1 6.9	
16 years of age and over.....	1914 1909	90,203 80,911	83,837 75,363	6,366 5,548	92.9 93.1	7.1 6.9	
Under 16 years of age.....	1914 1909	219 484	107 443	52 41	76.3 91.5	23.7 8.5	
Slaughtering.....	1914 1909	10,841 8,495	10,582 8,300	259 195	97.6 97.7	2.4 2.3	
Proprietors and officials.....	1914 1909	1,123 988	1,108 979	15 9	98.7 99.1	1.3 0.9	
Proprietors and firm members.....	1914 1909	665 692	658 688	7 4	98.9 99.4	1.1 0.6	
Salaried officers of corporations.....	1914 1909	206 120	198 115	8 5	96.1 95.8	3.9 4.2	
Superintendents and managers.....	1914 1909	252 176	252 176	0 0	100.0 100.0	0.0 0.0	
Clerks and other subordinate salaried employees.....	1914 1909	1,308 1,089	1,100 925	208 164	84.1 84.9	15.9 15.1	
Wage earners (average number).....	1914 1909	8,410 6,418	8,374 6,396	36 22	99.6 99.7	0.4 0.3	
16 years of age and over.....	1914 1909	8,386 6,406	8,350 6,384	36 22	99.6 99.7	0.4 0.3	
Under 16 years of age.....	1914 1909	24 12	24 12	0 0	100.0 100.0	0.0 0.0	

Table 9 gives for the several classes of persons engaged in the industry as a whole and in each branch the percentages of increase from 1909 to 1914, and the per cent distribution at these two censuses.

Table 9

INDUSTRY AND CLASS.	PERSONS ENGAGED IN THE INDUSTRY.							
	Per cent of increase, ¹ 1909-1914.			Per cent distribution.				
	Total.	Male.	Female.	Total.		Male.		Female.
				1914	1909	1914	1909	1914
Total for the industry.....	14.9	14.2	24.3	100.0	100.0	100.0	100.0	100.0
Proprietors and officials.....	8.9	8.6	.....	2.6	2.8	2.8	2.9	0.6
Proprietors and firm members.....	-1.1	-1.9	.....	1.0	1.1	1.0	1.2	0.3
Salaried officers of corporations.....	5.7	5.6	.....	0.6	0.7	0.6	0.7	0.2
Superintendents and managers.....	21.9	21.7	.....	1.1	1.0	1.2	1.1	(*)

¹ A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.

² Less than one-tenth of 1 per cent.

Table 9—Continued.

INDUSTRY AND CLASS.	PERSONS ENGAGED IN THE INDUSTRY.							
	Per cent of increase, 1909-1914.			Per cent distribution.				
	Total.	Male.	Female.	Total.		Male.		Female.
				1914	1909	1914	1909	1914
Clerks and other subordinate salaried employees.....	29.4	26.2	56.8	16.2	14.4	15.2	13.8	27.8
Wage earners (average number).....	12.5	12.4	15.0	81.2	82.9	82.0	83.3	71.6
16 years of age and over.....	12.9	12.8	14.9	81.0	82.4	81.8	82.8	71.0
Under 16 years of age.....	-51.0	-58.0	26.8	0.2	0.5	0.2	0.5	0.6
Slaughtering and meat packing.....	13.8	13.0	24.1	100.0	100.0	100.0	100.0	100.0
Proprietors and officials.....	6.5	6.3	.....	1.9	2.0	2.0	2.1	0.4
Proprietors and firm members.....	2.9	1.7	.....	0.4	0.5	0.5	0.5	0.2
Salaried officers of corporations.....	-8.0	-8.0	.....	0.5	0.6	0.5	0.6	0.1
Superintendents and managers.....	17.7	17.5	.....	1.0	0.9	1.0	1.0	(*)
Clerks and other subordinate salaried employees.....	30.1	26.7	60.2	16.6	14.5	15.7	14.0	26.3
Wage earners (average number).....	11.1	10.8	14.8	81.5	83.5	82.3	83.8	73.3
16 years of age and over.....	11.5	11.2	14.7	81.3	83.0	82.1	83.3	72.7
Under 16 years of age.....	-54.8	-62.3	26.8	0.2	0.5	0.2	0.5	0.6
Slaughtering.....	27.6	27.5	32.8	100.0	100.0	100.0	100.0	100.0
Proprietors and officials.....	13.7	13.2	.....	10.4	11.6	10.5	11.8	5.8
Proprietors and firm members.....	-3.9	-4.4	.....	6.1	8.1	6.2	8.3	2.7
Salaried officers of corporations.....	71.7	72.2	.....	1.9	1.4	1.9	1.4	3.1
Superintendents and managers.....	43.2	43.2	.....	2.3	2.1	2.4	2.1	.....
Clerks and other subordinate salaried employees.....	20.1	18.9	26.8	12.1	12.8	10.4	11.1	80.3
Wage earners (average number).....	31.0	30.9	.....	77.6	75.6	79.1	77.1	13.9
16 years of age and over.....	30.9	30.8	.....	77.4	75.4	78.9	76.9	13.9
Under 16 years of age.....	100.0	100.0	.....	0.2	0.1	0.2	0.1	.....

¹ Less than one-tenth of 1 per cent.

In order to compare the distribution of persons engaged in the industry in 1914 with that shown at the census of 1904, it is necessary to use the classification employed at the earlier census. (See "Explanation of terms.") Table 10 makes this comparison according to occupational status.

Table 10

CLASS.	PERSONS ENGAGED IN THE INDUSTRY.							
	Number.			Per cent distribution.			Per cent of increase.	
	1914	1909	1904	1914	1909	1904	1909-1914	1904-1909
Total.....	121,729	105,971	87,077	100.0	100.0	100.0	14.9	21.7
Proprietors and firm members.....	1,157	1,170	980	0.9	1.1	1.1	-1.1	20.7
Salaried employees.....	21,740	16,988	11,974	17.9	16.0	13.8	28.0	41.9
Wage earners (average number).....	98,832	87,813	74,134	81.2	82.9	85.1	12.5	18.5

Salaried employees show the largest per cent of increase for both periods, and also an increase in the per cent distribution.

Wage earners employed, by months.—The following table gives the total number of wage earners employed on the 15th of each month, or the nearest representative day, for 1914 and 1909, and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

MONTH.	WAGE EARNERS IN THE INDUSTRY.					
	Number. ¹			Per cent of maximum.		
	1914	1909	1904	1914	1909	1904
January.....	106,613	92,804	79,006	98.3	98.6	93.8
February.....	103,062	90,332	76,213	95.0	95.9	90.5
March.....	99,633	86,032	74,023	91.9	91.4	88.6
April.....	94,090	82,708	72,324	86.8	87.8	85.9
May.....	91,973	82,862	73,386	84.8	88.0	87.1
June.....	95,108	84,989	75,406	87.7	90.3	89.5
July.....	94,848	84,800	75,102	87.5	90.1	71.4
August.....	91,292	84,562	72,043	84.2	89.8	73.7
September.....	95,128	87,525	72,446	87.7	93.0	86.0
October.....	101,938	90,517	78,155	94.0	96.1	92.8
November.....	103,859	92,446	81,677	95.8	98.2	97.0
December.....	108,440	94,162	84,227	100.0	100.0	100.0

¹ The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

The winter months show the greatest activity in this industry for the three census periods, and December

was the maximum month of employment; while the minimum number shifted from July in 1904 to April in 1909 and to August in 1914. The year 1909 shows the least fluctuation in the number employed, a difference of 11,454 between the maximum and minimum months. This industry was formerly characterized as a seasonal one, but with the adoption of scientific methods of curing and refrigeration there is now comparatively little variation in the number employed during the year.

Table 12 gives the total average number of wage earners employed in the industry during 1914, together with the total number employed on the 15th of each month, or the nearest representative day, for each state in which the average number was 500 or more in 1914. In order to avoid disclosing individual operations it was necessary to omit Oklahoma from the table.

December and January were the months of greatest activity in 11 states. March was the month of greatest activity in California, Washington, and Texas; November in Missouri and Pennsylvania; February in Maryland; and October in Nebraska. Colorado was the only state which employed the greatest number in a summer month.

Table 12

Table 12	WAGE EARNERS: 1914. (Month of maximum employment for each state is indicated by boldface figures and that of minimum by <i>italic</i> figures.)														Per cent minimum is of maximum.
	STATE.	Average number employed during year.	Number employed on the 15th day of the month or nearest representative day.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
United States.....	98,832	106,613	103,062	99,633	94,090	91,973	95,108	94,848	<i>91,292</i>	95,128	101,938	103,859	108,440	84.2	
California.....	2,172	2,217	2,239	2,251	2,174	2,163	2,135	2,128	2,089	2,116	2,165	2,177	2,210	92.8	
Colorado.....	777	826	733	802	807	784	830	730	699	685	800	790	788	82.5	
Illinois.....	31,315	33,637	32,751	31,603	28,867	<i>28,264</i>	29,968	29,213	28,489	30,948	33,712	32,962	36,366	79.9	
Indiana.....	4,481	5,272	4,686	4,168	4,066	<i>3,961</i>	4,484	4,521	4,390	<i>4,307</i>	4,338	4,759	4,820	75.1	
Iowa.....	4,413	4,809	4,886	4,374	4,011	4,087	4,321	4,534	<i>3,997</i>	<i>3,987</i>	4,146	4,663	5,141	77.6	
Kansas.....	9,884	11,015	10,298	9,739	9,314	9,119	9,259	9,330	8,881	9,523	10,359	10,890	10,781	81.5	
Maryland.....	1,221	1,264	1,271	1,241	1,255	1,239	1,212	1,194	1,230	1,189	<i>1,170</i>	1,208	1,179	92.0	
Massachusetts.....	3,233	3,659	3,362	3,318	3,185	<i>2,996</i>	3,124	3,164	3,023	3,070	3,179	3,294	3,422	81.9	
Michigan.....	1,112	1,158	1,141	1,104	<i>1,022</i>	1,047	1,110	1,127	1,080	1,122	1,163	1,096	1,174	87.1	
Minnesota.....	2,565	2,955	2,814	2,639	2,456	<i>2,201</i>	2,422	2,472	2,249	2,269	2,394	2,899	<i>3,010</i>	73.1	
Missouri.....	5,152	5,426	5,175	5,173	4,988	4,802	5,099	5,060	<i>4,630</i>	4,807	5,463	5,620	5,581	82.4	
Nebraska.....	5,713	5,870	5,855	5,897	5,573	5,548	5,449	5,637	<i>5,423</i>	5,616	5,977	5,320	5,886	90.8	
New Jersey.....	2,033	2,300	2,085	2,061	2,130	1,950	1,962	2,004	1,893	1,987	2,067	<i>1,848</i>	2,119	80.3	
New York.....	6,245	6,484	6,359	6,332	6,239	6,236	6,174	6,243	<i>6,113</i>	<i>6,113</i>	6,155	6,219	6,293	94.6	
Ohio.....	3,480	3,619	3,482	3,420	3,316	3,322	3,406	3,443	3,335	<i>3,310</i>	3,369	3,582	4,156	79.6	
Pennsylvania.....	3,618	3,702	3,694	3,639	<i>3,516</i>	3,532	3,534	3,545	3,519	3,595	3,696	3,719	3,701	94.5	
Texas.....	3,486	3,655	3,807	3,862	3,617	3,363	3,167	3,166	<i>2,940</i>	3,141	3,613	3,784	3,717	76.1	
Washington.....	864	896	908	912	866	871	868	841	855	842	838	<i>829</i>	842	90.9	
Wisconsin.....	2,011	2,511	2,183	1,992	1,870	1,718	1,775	1,739	<i>1,645</i>	1,648	2,106	2,210	2,736	60.1	

New York and Pennsylvania show the least fluctuation in wage earners employed during the year, as the minimum number is only 5.4 per cent less than the maximum in New York, and 5.5 per cent less in Pennsylvania. Wisconsin shows by far the greatest variation in numbers, the minimum number forming only 60.1 per cent of the maximum.

Prevailing hours of labor.—In Table 13 the average number of wage earners reported for 1914 and 1909 for the industry, by states, has been classified according

to the number of hours of labor per week prevailing in the establishments in which they were employed. The number employed in each establishment was classified as a total, even though a few employees worked a greater or less number of hours. The states selected were those in which at least 500 wage earners were employed. For reasons stated in a previous paragraph it was necessary to omit Oklahoma from the table.

Table 13

STATE.	Census year.	AVERAGE NUMBER OF WAGE EARNERS.								
		Total.	In establishments where the prevailing hours of labor per week were—							
			48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72.	Over 72.
United States.....	1914	98,832	4,728	3,263	13,188	8,734	68,019	511	355	34
	1909	87,813	4,787	4,068	10,267	4,113	63,572	574	319	113
California.....	1914	2,172	200	32	425	229	1,243	35	2	6
	1909	1,601	52	37	435	.....	1,014	46	6	11
Colorado.....	1914	777	1	281	13	.....	479	.....	3	.....
	1909	659	.....	.....	287	.....	372	.....	.....	.....
Illinois.....	1914	31,315	1,007	442	1,096	2,700	26,027	43	.....	.....
	1909	26,344	2,886	34	1,065	56	22,300	3	.....	.....
Indiana.....	1914	4,481	37	14	137	373	3,877	43	.....	.....
	1909	4,416	27	.....	.....	22	4,367	.....	.....	.....
Iowa.....	1914	4,413	7	.....	207	.....	4,194	.....	5	.....
	1909	4,125	323	.....	921	60	2,819	.....	2	.....
Kansas.....	1914	9,884	739	.....	3,384	2	5,759	.....	.....	.....
	1909	10,591	371	2,941	834	.....	6,442	.....	3	.....
Maryland.....	1914	1,221	11	6	98	224	879	3	.....	.....
	1909	999	22	.....	20	7	943	1	6	.....
Massachusetts.....	1914	3,233	42	28	995	967	1,201	.....	.....	.....
	1909	3,055	55	18	33	1,303	1,642	4	.....	.....
Michigan.....	1914	1,112	9	.....	30	3	1,070	.....	.....	.....
	1909	795	2	.....	33	1	759	.....	.....	.....
Minnesota.....	1914	2,565	.....	15	4	8	2,538	.....	.....	.....
	1909	1,902	.....	9	16	2	1,875	.....	.....	.....
Missouri.....	1914	5,152	625	84	785	1,827	1,729	.....	102	.....
	1909	4,649	4	.....	1,944	59	2,642	.....	.....	.....
Nebraska.....	1914	5,713	6	.....	3	.....	5,702	2	.....	.....
	1909	6,009	.....	.....	734	1,484	3,780	2	0	.....
New Jersey.....	1914	2,033	459	15	23	240	1,225	67	4	.....
	1909	1,707	105	261	40	132	1,018	.....	139	12
New York.....	1914	6,245	541	1,332	952	588	2,791	39	2	.....
	1909	5,847	521	321	896	419	3,851	17	22	.....
Ohio.....	1914	3,480	110	6	635	459	2,269	.....	.....	1
	1909	2,974	22	6	478	80	2,287	67	34	.....
Pennsylvania.....	1914	3,616	47	117	122	507	2,386	204	233	.....
	1909	2,940	49	118	44	242	2,283	149	55	.....
Texas.....	1914	3,486	21	57	2,696	.....	712	.....	.....	.....
	1909	3,539	9	.....	1,631	.....	1,949	.....	.....	50
Washington.....	1914	864	.....	.....	.....	100	764	.....	.....	.....
	1909	828	16	.....	31	.....	776	5	.....	.....
Wisconsin.....	1914	2,011	5	.....	866	102	1,038	.....	.....	.....
	1909	1,681	131	.....	734	.....	816	.....	.....	.....

The figures show a tendency toward a shorter working-day. In 1914 wage earners in establishments where the prevailing hours were 60 and over per week formed 69.7 per cent of the total number employed, as compared with 73.5 per cent in 1909.

By far the largest number of wage earners was employed in establishments where the prevailing hours of labor were 60 per week in both 1914 and 1909. In 1914 this number represented 68.8 per cent of the total and in 1909, 72.4 per cent. In Illinois and Kansas, the leading states, the number employed where the prevailing hours were 60 per week represented 83.1 per cent and 58.3 per cent, respectively, of the total number employed. Only 900 wage earners in the industry in 1914 were employed in establishments where the prevailing hours per week were over 60, a decrease of 106 since 1909. Pennsylvania employed 437, or 48.6 per cent of that number, in 1914, an increase of 233 since 1909.

Of the states for which separate figures are shown, Kansas employed the greatest number where the prevailing hours were 54 per week, and Nebraska the least, only 11 wage earners working other than 60 hours per week in the latter state.

Character of ownership.—Table 14 presents, for 1914 and 1909, statistics concerning the character of ownership, or legal organization, of establishments in the industry as a whole and in each branch, together with the per cent distribution.

The largest number of establishments, 39.4 per cent of the total, were operated by individuals. Those under corporate ownership, though forming but 38.6 per cent of the total number, gave employment to 92.1 per cent of the average number of wage earners, and produced 91.1 per cent of the total value of products in 1914. These proportions being slightly greater in each instance than those for 1909. The group "all others" is composed of partnerships and

firms, with the exception of three establishments, two of which are under cooperative and one under municipal ownership.

In the meat-packing branch of the industry the same conditions are true, corporations forming even

higher proportions than for the industry as a whole. In the slaughtering branch the proportion is less, being 24.4 per cent of the establishments, 71.1 per cent of the wage earners, and 66.4 per cent of the value of products.

Table 14

CHARACTER OF OWNERSHIP.	NUMBER OF ESTABLISHMENTS.		AVERAGE NUMBER OF WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.	
	1914	1909	1914	1909	1914	1909	1914	1909
Total for the industry.....	1,279	1,221	98,832	87,813	\$1,651,965,424	\$1,355,544,431	\$210,302,766	\$164,106,355
Individuals.....	504	494	3,769	3,925	69,133,795	68,625,256	9,324,262	8,192,136
Corporations.....	494	450	91,056	79,831	1,505,177,165	1,211,015,811	191,965,403	147,651,305
All others.....	281	277	4,007	4,057	77,654,464	75,903,364	9,013,101	8,262,914
Per cent distribution:								
Individuals.....	39.4	40.5	3.8	4.5	4.2	5.1	4.4	5.0
Corporations.....	38.6	36.9	92.1	90.9	91.1	89.3	91.3	90.0
All others.....	22.0	22.7	4.1	4.6	4.7	5.6	4.3	5.0
Slaughtering and meat packing.....	649	656	90,422	81,395	\$1,454,495,888	\$1,204,248,578	\$186,742,474	\$145,012,457
Individuals.....	187	200	2,598	2,824	39,957,601	38,142,737	5,650,238	4,826,338
Corporations.....	340	341	85,075	76,080	1,374,002,157	1,134,279,882	176,149,435	136,036,543
All others.....	122	115	2,749	2,491	40,536,130	31,825,959	4,942,801	4,149,576
Per cent distribution:								
Individuals.....	28.8	30.5	2.9	3.5	2.7	3.2	3.0	3.3
Corporations.....	52.4	52.0	94.1	93.5	94.5	94.2	94.3	93.8
All others.....	18.8	17.5	3.0	3.1	2.8	2.6	2.6	2.9
Slaughtering.....	630	565	8,410	6,418	\$197,469,536	\$151,295,853	\$23,560,292	\$19,093,896
Individuals.....	317	294	1,171	1,101	29,176,194	30,482,519	3,674,024	3,365,796
Corporations.....	154	109	5,981	3,751	131,175,008	76,735,929	15,815,968	11,614,762
All others.....	159	162	1,258	1,566	37,118,334	44,077,405	4,070,300	4,113,338
Per cent distribution:								
Individuals.....	50.3	52.0	13.9	17.2	14.8	20.1	15.6	17.6
Corporations.....	24.4	19.3	71.1	58.4	66.4	50.7	67.1	60.8
All others.....	25.2	28.7	15.0	24.4	18.8	29.1	17.3	21.5

In Kansas, Missouri, Nebraska, and Texas corporations reported over 99 per cent of the total value of products, and in California, Illinois, Indiana, Massachusetts, Michigan, Minnesota, Washington, and Wisconsin over 90 per cent.

Size of establishments.—The tendency of the indus-

try as a whole and of its branches to become concentrated in large establishments is indicated by the statistics given in Table 15. In this classification each establishment is considered by itself regardless of whether two or more plants are controlled by a single concern.

Table 15

INDUSTRY AND VALUE OF PRODUCT.	NUMBER OF ESTABLISHMENTS.			AVERAGE NUMBER OF WAGE EARNERS.			VALUE OF PRODUCTS.			VALUE ADDED BY MANUFACTURE.		
	1914	1909	Per cent distribution.	1914	1909	Per cent distribution.	1914	1909	Per cent distribution.	1914	1909	Per cent distribution.
Total for the industry.....	1,279	1,221	100.0	98,832	87,813	100.0	\$1,651,965,424	\$1,355,544,431	100.0	\$210,302,766	\$164,106,355	100.0
Less than \$5,000.....	25	16	2.0	25	26	(1)	82,330	45,969	(1)	30,378	25,529	(1)
\$5,000 to \$20,000.....	182	134	14.2	322	268	0.3	2,170,193	1,757,909	0.1	584,890	459,298	0.3
\$20,000 to \$100,000.....	427	438	33.4	1,815	1,900	1.8	21,631,136	22,239,416	1.3	3,988,776	4,095,769	1.9
\$100,000 to \$1,000,000.....	439	467	34.3	8,379	9,207	8.5	149,873,720	155,039,724	9.1	19,337,068	21,348,065	9.2
\$1,000,000 and over.....	206	166	16.1	88,291	76,412	89.3	1,478,208,045	1,176,461,413	89.5	186,361,654	138,177,674	88.6
Slaughtering and meat packing.....	649	656	100.0	90,422	81,395	100.0	1,454,495,888	1,204,248,578	100.0	186,742,474	145,012,457	100.0
Less than \$5,000.....	7	3	1.1	5	5	(1)	27,493	12,387	(1)	7,629	3,380	(1)
\$5,000 to \$20,000.....	84	48	12.9	128	86	0.1	1,038,823	638,798	0.1	263,766	151,533	0.1
\$20,000 to \$100,000.....	159	188	24.6	731	955	0.8	8,140,213	9,705,718	0.6	1,672,934	1,939,925	0.9
\$100,000 to \$1,000,000.....	237	280	36.5	5,928	7,336	6.0	87,688,004	100,274,418	6.0	12,599,028	15,118,607	6.7
\$1,000,000 and over.....	162	137	25.0	83,630	73,013	92.5	1,357,601,355	1,063,617,257	93.3	172,199,117	127,799,012	92.2
Slaughtering.....	630	565	100.0	8,410	6,418	100.0	197,469,536	151,295,853	100.0	23,560,292	19,093,896	100.0
Less than \$5,000.....	18	13	2.9	20	21	0.2	54,837	33,582	(1)	22,749	22,149	0.1
\$5,000 to \$20,000.....	98	86	15.0	194	182	2.3	1,131,370	1,119,111	0.6	321,124	307,765	1.4
\$20,000 to \$100,000.....	268	250	42.5	1,084	945	12.9	13,490,923	12,533,698	6.8	2,315,842	2,155,844	9.8
\$100,000 to \$1,000,000.....	202	187	32.1	2,451	1,871	29.1	62,185,716	54,765,306	31.5	6,738,040	6,229,478	28.6
\$1,000,000 and over.....	44	29	7.0	4,661	3,399	55.4	120,606,690	82,844,156	61.1	14,162,537	10,378,602	60.1

Less than one-tenth of 1 per cent.

In the industry as a whole, the number of establishments reporting products valued at \$1,000,000 and

over in 1914 was only 16.1 per cent of the total number, but these establishments reported 88,291 wage earners,

or 89.3 per cent of the total number; their products formed 89.5 per cent; and the value added by manufacturer 88.6 per cent, of the totals for all establishments.

The average value of products per establishment, all establishments considered, was \$1,291,607 in 1914 as compared with \$1,110,192 in 1909.

Table 16 shows the size of establishments in 1914 and

1909, as measured by the number of wage earners employed in the industry in all states, except Oklahoma, having 500 or more wage earners.

Of the 1,279 establishments reported for the industry, only 74 employed over 250 wage earners each, but the wage earners in these establishments numbered 75,181, or 76.1 per cent of the total number in 1914, and 65,659, or 74.8 per cent in 1909.

Table 16

Table 16	STATE.	Census year.	ESTABLISHMENTS EMPLOYING—																		
			TOTAL.		No wage earners.	1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.	
			Establishments.	Wage earners (average number).		Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.
United States.....	1914	1,279	98,832	65	555	1,317	307	3,503	145	4,789	82	5,868	51	8,174	30	10,426	22	16,428	22	48,327	
	1909	1,221	87,813	51	534	1,385	302	3,352	148	4,779	84	6,069	40	8,569	22	7,342	17	12,895	23	45,422	
California.....	1914	81	2,172	3	36	97	28	309	7	204	2	104	3	577	2	881	.....	.....	.....	.....
	1909	74	1,601	3	33	88	25	277	6	157	4	306	1	111	2	662	.....	.....	.....	.....
Colorado.....	1914	16	777	.....	6	15	5	59	1	34	2	139	1	234	1	296	.....	.....	.....	.....
	1909	13	659	2	3	10	3	40	1	23	2	120	1	184	1	282	.....	.....	.....	.....
Illinois.....	1914	70	31,315	.....	12	36	9	118	15	491	11	720	8	1,191	5	1,699	1	800	9	26,200
	1909	75	26,344	2	13	38	16	205	17	590	10	776	5	954	1	254	2	1,617	9	21,910	
Indiana.....	1914	65	4,481	2	32	84	14	168	7	232	6	476	2	289	1	317	.....	.....	1	2,915
	1909	58	4,416	.....	26	73	18	215	6	191	4	276	2	273	1	335	.....	.....	1	3,053
Iowa.....	1914	28	4,413	.....	10	32	6	57	3	108	3	248	2	329	.....	.....	3	2,531	1	1,108
	1909	27	4,125	.....	8	16	7	87	1	36	5	359	2	318	.....	.....	3	2,234	1	1,075
Kansas.....	1914	26	9,884	1	4	12	9	69	2	73	1	76	1	209	2	737	2	1,618	4	7,070	
	1909	35	10,591	1	16	37	3	21	5	198	.....	.....	2	297	1	365	3	2,406	4	7,267
Maryland.....	1914	46	1,221	1	23	53	9	97	5	210	6	497	2	364	.....	.....	.....	.....	.....	.....
	1909	43	999	1	21	47	10	103	4	141	6	470	1	238	.....	.....	.....	.....	.....	.....
Massachusetts.....	1914	46	3,233	5	19	50	10	108	6	160	.....	.....	2	362	2	696	2	1,857	.....	.....
	1909	45	3,055	1	21	59	15	129	1	31	2	145	1	196	2	568	1	912	1	1,015	
Michigan.....	1914	17	1,112	3	7	20	2	15	2	69	.....	.....	1	129	2	879	.....	.....	.....	.....
	1909	19	795	2	9	17	1	16	4	118	.....	.....	2	347	1	297	.....	.....	.....	.....
Minnesota.....	1914	19	2,565	.....	7	21	6	64	2	72	1	72	1	108	1	399	.....	.....	1	1,829
	1909	23	1,902	1	9	33	4	45	5	165	1	59	.....	.....	1	303	.....	.....	1	1,297
Missouri.....	1914	81	5,152	.....	7	14	12	140	3	81	2	130	1	102	1	292	4	2,688	1	1,705
	1909	87	4,649	2	13	29	9	110	6	176	2	125	1	134	2	996	2	1,416	1	1,663	
Nebraska.....	1914	10	5,713	1	2	5	2	14	.....	.....	.....	.....	1	178	.....	.....	1	723	3	4,793
	1909	15	6,009	1	7	19	2	13	.....	.....	.....	.....	1	180	.....	.....	1	734	3	5,063
New Jersey.....	1914	56	2,033	3	22	49	14	179	8	254	4	273	1	135	2	543	1	600	.....	.....
	1909	61	1,707	1	26	79	22	252	3	106	6	436	2	442	1	392	.....	.....	.....	.....
New York.....	1914	184	6,245	8	90	192	43	498	20	705	11	705	5	792	4	1,204	3	2,140	.....	.....
	1909	150	5,847	7	60	168	39	450	24	747	9	607	5	808	4	1,361	2	1,706	.....	.....
Ohio.....	1914	152	3,480	23	61	142	33	375	17	548	11	813	5	697	1	302	1	603	.....	.....
	1909	137	2,974	10	67	176	31	350	13	440	13	961	1	122	1	347	1	578	.....	.....
Pennsylvania.....	1914	146	3,616	5	75	174	28	326	22	703	6	449	9	1,546	1	418	.....	.....	.....	.....
	1909	155	2,940	13	74	193	32	362	20	585	10	678	5	766	1	356	.....	.....	.....	.....
Texas.....	1914	18	3,486	.....	4	11	7	113	1	22	2	138	1	201	1	354	.....	.....	2	2,647
	1909	14	3,639	.....	3	5	3	26	3	96	1	78	2	355	.....	.....	.....	.....	2	3,079
Washington.....	1914	11	864	.....	3	5	2	24	2	68	2	198	1	226	1	343	.....	.....	.....	.....
	1909	14	828	.....	4	7	5	60	1	40	1	61	2	392	1	259	.....	.....	.....	.....
Wisconsin.....	1914	22	2,011	1	10	34	4	47	3	91	1	60	1	102	.....	.....	2	1,677	.....	.....
	1909	24	1,681	1	12	33	3	29	3	87	2	130	1	110	.....	.....	2	1,292	.....	.....

Only 22 establishments employed over 1,000 wage earners in 1914. Nine were located in Illinois, four in Kansas, three in Nebraska, two in Texas, and one each in Indiana, Iowa, Minnesota, and Missouri. There were 65 establishments which employed no wage earners. In these establishments the work was done by the proprietors or firm members or on contract

or, where wage earners were reported, the term of employment was so short that in computing the average, as described in the "Explanation of terms," the number was less than one, and the establishment was classed as one having no wage earners.

Table 17 presents for 1914 and 1909 percentages based on the figures in Table 16.

Table 17

STATE.	Cen- sus year.	PER CENT OF TOTAL AVERAGE NUMBER OF WAGE EARNERS IN ESTABLISHMENTS EMPLOYING SPECIFIED NUMBER.							
		1 to 5	6 to 20	21 to 50	51 to 100	101 to 250	251 to 500	501 to 1,000	Over 1,000
United States.....	1914	1.3	3.5	4.8	5.9	8.3	10.6	16.6	48.9
	1909	1.6	3.8	5.4	6.9	7.5	8.4	14.7	51.7
California.....	1914	4.5	14.2	9.4	4.8	26.6	40.6	.....	.....
	1909	5.5	17.3	9.8	19.1	6.9	41.3	.....	.....
Colorado.....	1914	1.9	7.0	4.4	17.9	30.1	38.1	.....	.....
	1909	1.5	6.1	3.5	18.2	27.9	42.8	.....	.....
Illinois.....	1914	0.1	0.4	1.6	2.3	3.8	5.4	2.6	83.9
	1909	0.1	0.8	2.2	2.9	3.6	1.0	6.1	83.2
Indiana.....	1914	1.9	3.7	5.2	10.6	6.4	7.1	.....	65.1
	1909	1.7	4.9	4.3	0.2	6.2	7.6	.....	69.1
Iowa.....	1914	0.7	1.3	2.4	5.6	7.5	.....	57.4	25.1
	1909	0.4	2.1	0.9	8.7	7.7	.....	54.2	26.1
Kansas.....	1914	0.1	0.9	0.7	0.8	2.1	7.5	16.4	71.5
	1909	0.3	0.2	1.9	.....	2.8	3.4	22.7	68.6
Maryland.....	1914	4.3	7.9	17.2	40.7	29.8	.....	.....	.....
	1909	4.7	10.3	14.1	47.0	23.8	.....	.....	.....
Massachusetts.....	1914	1.5	3.3	5.0	.....	11.2	21.5	57.4	.....
	1909	1.9	4.2	1.0	4.7	6.4	18.6	29.9	33.2
Michigan.....	1914	1.8	1.3	6.2	.....	11.6	79.0	.....	.....
	1909	2.1	2.0	14.8	.....	43.6	37.4	.....	.....
Minnesota.....	1914	0.8	2.5	2.8	2.8	4.2	15.6	.....	71.3
	1909	1.7	2.4	8.7	3.1	.....	15.9	.....	68.2
Missouri.....	1914	0.3	2.7	1.6	2.5	2.0	5.7	52.2	33.1
	1909	0.6	2.4	3.8	2.7	2.9	21.4	30.5	35.8
Nebraska.....	1914	0.1	0.2	.....	.....	3.1	.....	12.7	83.9
	1909	0.3	0.2	.....	.....	3.0	.....	12.2	84.3
New Jersey.....	1914	2.4	8.8	12.5	13.4	6.6	26.7	29.5	.....
	1909	4.6	14.8	6.2	25.5	25.9	23.0	.....	.....
New York.....	1914	3.1	8.0	11.3	11.3	12.7	19.3	34.4	.....
	1909	2.9	7.7	12.8	10.4	13.8	23.3	29.2	.....
Ohio.....	1914	4.1	10.8	15.7	23.4	20.0	8.7	17.3	.....
	1909	5.9	11.8	14.8	32.3	4.1	11.7	19.4	.....
Pennsylvania.....	1914	4.8	9.0	19.4	12.4	42.8	11.6	.....	.....
	1909	6.6	12.3	19.9	23.1	26.1	12.1	.....	.....
Texas.....	1914	0.3	3.2	0.6	4.0	5.8	10.2	.....	75.9
	1909	0.1	0.7	2.6	2.1	9.8	.....	.....	84.6
Washington.....	1914	0.6	2.8	7.9	22.9	26.2	39.7	.....	.....
	1909	0.8	8.8	4.8	7.4	47.3	31.3	.....	.....
Wisconsin.....	1914	1.7	2.3	4.5	3.0	5.1	.....	83.4	.....
	1909	2.0	1.7	5.2	7.7	6.5	.....	76.9	.....

Expenses.—The census does not purport to furnish figures that can be used to determine total cost of manufacture, but the relative importance of material expense and labor, or service expense, as reported at the different censuses, is a matter of interest.

In Table 32 the expenses reported for 1914, comprising (1) salaries, (2) wages, (3) cost of materials, and (4) rent, taxes, and contract work, were equal in the aggregate to 93 per cent of the value of all products. The ratio in 1909 for the same classes of expense was 93.3 per cent; in 1904, 94.2 per cent; and in 1899, 92.6 per cent. These figures indicate a slight variation in these successive census periods between the specific factors of cost of production and value of product. Of the leading states the lowest ratio of total expenses reported to value of products was in Illinois—90.5 per cent—and the highest in Missouri—96.8 per cent.

Materials, including fuel, is the principal expense item, and using total expenses as a base, materials formed 93.8 per cent in 1914, wages 4 per cent, salaries 1.8 per cent, and rent, taxes, and contract work, three tenths of 1 per cent. In 1909, materials formed 94.2 per cent, and wages and salaries, 5.5 per cent. In 1904 the percentages were 93.6 and 6.2, respectively, and in 1899, 94 and 6.

Engines and power.—Power amounting to 2,333 horsepower was first reported for the industry at the census of 1869. Table 18 shows for 1914, 1909, and 1904 for the industry, the number and horsepower capacity of engines or motors, employed in generating power (including the number and rated horsepower of electric motors operated by purchased current). It also shows separately the number and rated horsepower of electric motors operated by current generated in the establishments reporting.

Table 18

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
				Amount.			Per cent distribution.		
	1914	1909	1904	1914	1909	1904	1914	1909	1904
Primary power, total.....	5,095	2,766	1,414	253,066	202,432	115,956	100.0	100.0	100.0
Owned.....	1,655	1,687	1,206	212,963	189,109	112,961	84.2	93.4	87.4
Steam engines and turbines.....	1,556	1,596	1,173	210,536	187,324	112,131	83.2	92.5	86.7
Internal-combustion engines.....	96	67	23	2,412	1,744	821	1.0	0.9	0.4
Water wheels, turbines, and motors.....	3	4	10	15	41	309	(¹)	(¹)	0.3
Rented.....	3,440	1,099	208	40,103	13,323	2,995	15.8	6.6	2.6
Electric.....	3,440	1,099	208	39,116	12,588	2,870	15.6	6.2	2.5
Other.....	.....	.....	.....	987	735	125	0.4	0.4	0.1
Electric.....	9,843	5,498	2,291	117,810	76,124	39,852	100.0	100.0	100.0
Rented.....	3,440	1,099	208	39,116	12,588	2,870	33.2	16.5	7.2
Generated by establishments reporting.....	6,403	4,399	2,083	78,694	63,536	37,012	66.8	83.5	92.8

¹ Figures for horsepower include for 1909 and 1904 the amounts reported under the head of "other" owned power.

² Less than one-tenth of 1 per cent.

There was an increase of primary power for the decade of 137,110 horsepower, or 118.2 per cent, and of this amount 100,002 horsepower, or 72.9 per cent, was owned power. Steam power was largely used but the proportion which this class formed of the total decreased from 96.7 per cent in 1904 to 83.2 in 1914,

being superseded by rented electric power. Although there was an increase of 1,891, or 363 per cent, in the horsepower of internal-combustion engines, the amount of this kind of power reported as well as that of water power is very insignificant when compared with that of steam. The electric horsepower rented and

that generated by the establishments reporting increased 36,246 and 41,682, respectively, during the decade. "Other rented power," which includes steam power supplied by belt and shaft, is very small, but increased 689.6 per cent during the period.

The figures for power, by states, are given in Table 32. Seven leading states—Illinois, Kansas, New York, Nebraska, Missouri, Ohio, and Texas—reported a combined total of 162,659 horsepower, or 64.3 per cent of the aggregate for the industry. Steam power was by far the most important kind of primary power used in all states except Idaho, Montana, Nevada, New Hampshire, Oregon, Utah, and Washington, where electric power was principally used, and California, Maine, Rhode Island, and Massachusetts, where steam and electric power were employed in about the same proportion. The only states using water power were Iowa, New York, and Oregon.

Fuel consumed.—Table 19 shows, for 1914, the quantity of each kind of fuel used for which data were obtained, for the industry as a whole, and for 19 separate states.

Bituminous coal was the principal fuel used in all the states specified except Massachusetts and New Jersey, where larger quantities of anthracite were consumed. Illinois used 779,357 more tons of bituminous coal than any other state, and 36.8 per cent

of the aggregate for the industry. California, Kansas, and Texas used 1,089,678 barrels of oil, or 90.7 per cent of the total quantity consumed in the industry. Gas, which includes both the natural and manufactured gas, increased 988,041,000 cubic feet from 1909 to 1914. All of the gas used in Kansas, Oklahoma, Texas, and West Virginia, and almost all of that used in Missouri was natural gas.

Table 19

STATE.	COAL.		Coke (tons, 2,000 lbs.).	Oil, in- cluding gasoline (barrels).	Gas (1,000 cubic feet).
	Anthra- cite (tons, 2,240 lbs.).	Bitumi- nous (tons, 2,000 lbs.).			
United States.....	222,975	2,786,196	13,859	1,201,456	2,014,965
California.....	30	135	10	204,169	4,513
Colorado.....		43,542			161
Illinois.....	5,161	1,024,711	9,410	1,267	197,411
Indiana.....		149,793		148	632
Iowa.....		222,726	60	80	1,821
Kansas.....	289	235,496	932	484,806	17,995
Maryland.....		45,858	1,446	172	270
Massachusetts.....	52,300	4,525		17	180
Michigan.....	28	27,887		4	
Minnesota.....		70,676		62	3,306
Missouri.....		223,102		73,416	195,771
Nebraska.....		245,354			9,143
New Jersey.....	62,001	11,439		79	3,351
New York.....	68,689	84,633	1,642	632	24,389
Ohio.....	5	91,169	200	75	368,369
Pennsylvania.....	33,751	80,985	140	182	19,160
Texas.....		62,715		400,703	77,115
Washington.....		10,489			100
Wisconsin.....	137	51,842		6	
All other states.....	594	99,119	19	35,638	1,091,278

SPECIAL STATISTICS RELATING TO MATERIALS AND PRODUCTS.

MATERIALS.

Table 20 shows statistics of materials used in the industry for 1914, 1909, 1904, and 1899.

Table 20	1914	1909	1904	1899
Materials, total cost.....	\$1,441,662,658	\$1,191,438,076	\$805,856,969	\$682,096,839
Animals slaughtered, cost.....	\$1,201,820,485	\$960,725,581	\$675,593,676	\$570,183,432
Bees—				
Number.....	27,149,042	8,114,860	7,147,835	5,525,824
Cost.....	\$490,108,203	\$392,127,010	\$289,040,930	\$247,146,262
Calves—				
Number.....	22,019,004	2,504,728	1,568,130	883,857
Cost.....	\$27,623,448	\$25,080,014	\$12,665,557	\$7,252,545
Sheep and lambs—				
Number.....	15,943,748	12,255,501	10,875,339	9,110,172
Cost.....	\$84,783,721	\$59,924,931	\$44,359,804	\$36,859,832
Hogs—				
Number.....	34,441,918	33,870,616	30,977,639	30,595,522
Cost.....	\$597,097,518	\$483,383,848	\$329,765,480	\$278,370,494
Goats and kids—				
Number.....	8,117	33,224	(¹)	(¹)
Cost.....	\$29,345	\$121,230	(¹)	(¹)
All other animals, cost.....	\$2,178,250	\$138,548	\$61,905	\$554,299
Dressed meat purchased, cost.....	\$124,334,692	\$93,409,286	\$53,114,957	\$54,247,986
All other materials, cost.....	\$115,507,481	\$137,308,209	\$76,848,336	\$57,665,421

¹ In addition there was \$686,543 expended for animals and dressed meat purchased for further manufacture in establishments assigned to other classifications.

² In addition, 377,937 beeves, 243,360 calves, 795,519 sheep, lambs, and goats and kids, and 2,898,994 hogs, were slaughtered for others, and are not included except in a few cases.

³ Not reported separately.

The dressed meat purchased for further manufacture was procured from slaughtering establishments for which statistics are included in the report. Therefore, the amount is duplicated in the total value of products. Some of the packing and curing establish-

ments had animals slaughtered in custom abattoirs. In a few instances these animals were reported by both classes of establishments, thus resulting in a duplication, but this duplication applies only to the number of animals slaughtered, not to the cost, is limited, and has but slight effect on the total.

The total cost of all materials increased by \$759,565,819, or 111.4 per cent, during the 15 years covered by the table, and the cost of animals slaughtered by \$631,637,053, or 110.8 per cent. Dressed meat purchased, which includes not only meat for curing and canning, but also animal fats for the manufacture of lard, lard compounds and substitutes, oleo oil, and stearin, increased by \$70,086,706, or 129.2 per cent. The cost of "all other animals," including that of poultry, deer, and bear, increased considerably from 1899 to 1914. The cost of "all other materials" includes that of containers and materials for the manufacture of containers, ice and materials for the manufacture of ice, curing materials, cottonseed oil, fuel, rent of power, mill supplies, and freight. The cost of these materials was \$57,842,060 greater in 1914 than in 1899.

Exclusive of goats and kids, for which there were no available figures for 1904 and 1899, there were slaughtered in 1914 a total of 59,553,702 animals, as compared with 46,115,375 in 1899, an increase of 13,438,327, or 29.1 per cent. The increase was largely in the sheep and lambs, the number slaughtered

increasing 6,833,571, or 75 per cent during the 15 years. There was an actual decrease in the number of beeves and calves slaughtered in 1914 as compared with 1909. There was also a decrease in the number of goats and kids reported slaughtered, in this period, but this decrease was due largely to the method of reporting them with sheep and lambs in 1914 and separately in 1909.

According to the annual report of the Department of Agriculture, there were 165,244,000 food animals on the farms and ranges of the United States in 1914. This estimate includes animals of all ages for the year ending April 15. The report of the wholesale slaughtering establishments and abattoirs, for which statistics are given in this report, shows 63,877,629 animals slaughtered during the calendar year 1914, and there were in addition large numbers slaughtered on farms and by retail butchers.

As indicated by the table, from 1899 to 1914 the number of beeves slaughtered increased 1,623,218, or 29.4 per cent, and their cost \$242,961,941, or 98.3 per cent; the number of calves 1,135,147, or 128.4 per cent, and their cost \$20,370,903, or 280.9 per cent; the number of sheep and lambs 6,833,571, or 75 per cent, and their cost \$47,923,889, or 130 per cent; the number of hogs 3,846,391, or 12.6 per cent, and their cost \$318,727,024, or 114.5 per cent.

The following statement gives the average cost on the hoof per animal of four classes reported for the last four censuses:

CLASS.	AVERAGE LIVE COST PER HEAD.			
	1914	1909	1904	1899
Beeves.....	\$68.56	\$48.32	\$40.44	\$44.73
Calves.....	13.68	9.99	8.08	8.21
Sheep and lambs.....	5.32	4.89	4.08	4.05
Hogs.....	17.34	14.27	10.64	9.10

This statement shows an increase in the United States in the average cost per animal in all classes in 1914 as compared with the previous censuses. There is considerable diversity in the average cost per animal in the several states, due to the distance from markets, and grade and weight of animals slaughtered. Because of these conditions, average costs have not been given by states.

In addition to the animals enumerated in Table 20¹ but not included except in a few cases, there were 4,315,810 animals slaughtered in 1914 on a custom basis in establishments reported. Of this number, 2,208,077 were slaughtered in abattoirs doing custom work exclusively, both for the wholesale and retail markets.

The gross and net weights in pounds, on the hoof and dressed, with average weights per head, of the principal kinds of animals slaughtered in 1914, 1909, 1904, and 1899 are shown in Table 21.

The net or dressed weight does not include edible offal. The net weight of calves and sheep and lambs

includes in some cases the weight of skins and pelts—that is, calf and sheep and lamb carcasses with the skins on. The weights for sheep and lambs includes that of goats and kids, as they were not reported separately.

Table 21	1914	1909	1904	1899
BEEVES.				
Number.....	7,149,042	8,114,860	7,147,835	5,525,824
Weight on hoof, pounds.....	7,076,145,687	8,265,991,836	7,485,407,944	5,908,165,706
Average weight on hoof, pounds.....	990	1,019	1,047	1,069
Weight, dressed, pounds.....	3,786,382,167	4,409,718,922	4,066,264,877	3,222,733,617
Average weight, dressed, pounds.....	530	543	569	583
CALVES.				
Number.....	2,019,004	2,504,728	1,568,130	883,857
Weight on hoof, pounds.....	337,565,316	419,604,080	261,683,572	124,354,340
Average weight on hoof, pounds.....	167	168	167	141
Weight, dressed, pounds.....	206,311,127	262,315,076	161,049,581	79,498,483
Average weight, dressed, pounds.....	102	105	103	90
SHEEP AND LAMBS, AND GOATS AND KIDS.				
Number.....	15,951,860	12,288,725	110,875,339	19,110,172
Weight on hoof, pounds.....	1,259,595,728	987,566,521	930,168,367	764,209,802
Average weight on hoof, pounds.....	79	80	86	84
Weight, dressed, pounds.....	629,723,014	496,640,569	464,872,621	389,132,646
Average weight, dressed, pounds.....	39	40	43	43
HOGS.				
Number.....	34,441,913	33,870,616	30,977,639	30,595,522
Weight on hoof, pounds.....	7,277,670,937	6,856,832,417	6,588,349,782	6,676,709,331
Average weight on hoof, pounds.....	211	202	213	218
Weight, dressed, pounds.....	5,476,236,776	5,201,902,778	5,048,832,850	5,203,280,487
Average weight, dressed, pounds.....	159	154	163	170

¹ Figures for goats and kids not available.

The decrease of 79 pounds, or 7.4 per cent, in the average weight per beef since 1899 is attributed to the increase in the slaughter of baby beeves, for which the average market or gross weight per animal is estimated by the Department of Agriculture for the United States as a whole at 834 pounds. The scarcity of mature market animals also accounts for the lighter weights of hogs and sheep and lambs slaughtered in 1914. The average weight of calves has been practically the same at the last three censuses, but the average in 1914 of 167 pounds for the entire country was considerably greater than the average for the Chicago district, which was 139 pounds. The average for National City, Ill., was 235 pounds and that for Kansas City, Kans., was 218 pounds. The weights of goats and kids were not reported separately, but were included in the weights for sheep and lambs. The number of these animals slaughtered in 1914 was 8,117 and in 1909 33,224, so small in both periods that it does not affect the average weight per animal.

Animals slaughtered, by states.—Table 22 shows, by states, the number and cost of each of the principal kinds of animals slaughtered in 1914 and the number slaughtered in 1909 and 1904. The states included are those in which at least 100,000 beeves, 50,000 calves, 100,000 sheep and lambs, and 200,000 hogs were slaughtered in 1914. In 1909 Washington slaughtered the requisite number of beeves; California,

Missouri, and Nebraska the number of calves; and Kentucky the number of hogs, to be shown in the table, but in 1914 these states fell below the standard and are included in "all other states." In Iowa,

Michigan, Oregon, Texas, and Utah over 100,000 sheep and lambs were slaughtered in 1914, and these states were added to this group in the table, but in 1909 they were included in "all other states."

Table 22

CLASS AND STATE.	ANIMALS SLAUGHTERED.				CLASS AND STATE.	ANIMALS SLAUGHTERED.			
	1914		1909	1904		1914		1909	1904
	Cost.	Number.	Number.	Number.		Cost.	Number.	Number.	Number.
Beeves, total.....	\$490,108,203	7,149,042	8,114,860	7,147,835	Sheep and lambs—Con.				
California.....	21,709,776	315,762	341,617	259,716	Michigan.....	\$644,913	125,537	88,285	44,710
Illinois.....	133,022,896	1,864,982	2,181,199	2,643,028	Minnesota.....	983,664	198,665	133,244	180,695
Indiana.....	12,432,732	200,180	252,697	178,678	Missouri.....	4,192,669	776,751	546,649	564,784
Iowa.....	15,759,309	219,359	252,821	91,564	Nebraska.....	9,563,543	1,797,072	1,127,962	949,310
Kansas.....	64,624,924	990,188	1,362,572	1,019,553	New Jersey.....	2,436,594	426,063	423,724	502,642
Minnesota.....	9,578,618	166,903	125,852	108,829	New York.....	11,229,042	1,999,134	1,918,721	1,537,637
Missouri.....	24,718,132	359,910	30,356	573,887	Ohio.....	1,418,726	300,337	229,985	148,418
Nebraska.....	37,350,524	491,632	651,258	627,129	Oregon.....	700,294	141,892	92,038	82,870
New York.....	59,904,976	636,389	668,447	478,716	Pennsylvania.....	2,356,186	436,881	445,471	363,494
Ohio.....	16,375,682	269,719	265,191	189,613	Texas.....	1,196,295	284,050	77,805	49,831
Pennsylvania.....	19,340,197	236,949	252,897	197,581	Utah.....	511,888	115,501	47,703	26,371
Texas.....	24,219,588	554,479	527,469	285,295	Washington.....	1,879,239	362,854	290,383	179,819
All other states.....	51,070,789	842,590	702,484	494,246	All other states.....	2,159,715	431,448	341,236	416,559
Calves, total.....	27,623,448	2,019,004	2,504,728	1,568,130	Hogs, total.....	597,097,518	34,441,913	33,870,616	30,977,639
Illinois.....	5,685,254	439,616	513,639	295,928	California.....	6,101,576	400,306	344,319	314,085
Indiana.....	767,011	61,500	60,578	37,566	Colorado.....	4,750,771	259,821	276,618	108,741
Kansas.....	1,897,440	130,102	209,357	92,751	Illinois.....	135,585,276	7,205,510	7,293,544	7,884,370
Massachusetts.....	1,135,673	115,724	129,162	88,651	Indiana.....	29,461,678	1,840,811	1,761,454	1,498,767
Minnesota.....	938,138	79,589	55,991	21,823	Iowa.....	45,672,154	2,394,061	2,487,251	2,070,473
New Jersey.....	1,059,927	68,492	95,604	103,389	Kansas.....	45,629,492	2,825,764	4,191,927	3,089,611
New York.....	5,785,777	378,197	377,121	263,751	Maryland.....	7,215,643	622,626	554,761	631,746
Ohio.....	1,931,710	141,358	150,223	86,906	Massachusetts.....	26,854,736	1,263,238	1,501,456	1,549,395
Pennsylvania.....	1,665,435	115,446	152,851	112,867	Michigan.....	12,325,271	761,380	444,756	388,603
Texas.....	2,151,433	145,391	234,172	94,093	Minnesota.....	28,221,939	1,559,491	1,063,655	1,047,094
Wisconsin.....	1,123,516	101,936	129,207	34,507	Missouri.....	47,559,427	2,793,439	2,471,658	2,126,932
All other states.....	3,482,134	241,653	396,823	305,898	Nebraska.....	40,852,237	2,105,510	2,103,602	2,358,325
Sheep and lambs, total.....	84,783,721	15,943,743	12,255,501	10,875,339	New Jersey.....	16,305,599	1,297,313	1,210,849	1,282,410
California.....	6,784,792	1,427,250	1,071,998	990,514	New York.....	26,315,587	1,725,688	1,802,669	1,623,758
Illinois.....	27,342,079	4,882,940	3,892,142	3,634,216	Ohio.....	32,802,989	1,911,608	1,725,285	1,447,778
Iowa.....	1,547,912	307,419	49,577	13,071	Pennsylvania.....	25,321,253	1,573,974	1,222,880	1,085,634
Kansas.....	7,750,380	1,559,114	1,136,027	771,818	Texas.....	8,812,534	570,182	939,674	3470,40
Massachusetts.....	2,085,709	370,835	342,461	418,580	Washington.....	5,508,290	373,321	239,352	122,313
					Wisconsin.....	20,185,141	1,110,449	1,078,361	938,478
					All other states.....	31,615,925	1,847,421	1,166,545	1,162,176

The large decrease of 965,818 in beeves and 485,724 in calves for 1914 as compared with 1909 was partly attributable to the outbreak of foot and mouth disease in the fall of 1914. The scarcity of mature market animals was also a factor in this decrease. The most pronounced decrease was in Kansas and Illinois. The establishments in these states during 1914 slaughtered 3,424,888 beeves and calves, as compared with 4,266,767 in 1909, a decrease of 841,879, or 19.7 per cent.

Illinois shows more animals of each kind slaughtered in each period presented in the table than any other state. All states show increases in the number of beeves slaughtered in 1914 as compared with 1904,

except Illinois, Kansas, Missouri, and Nebraska; in the number of calves slaughtered except New Jersey; in the number of sheep and lambs, except Massachusetts and New Jersey; and in the number of hogs except Illinois, Kansas, Maryland, Massachusetts, and Nebraska.

Gross and net weights of animals slaughtered, by states.—Table 23 shows for the principal states the aggregate gross and net weights, in pounds, of beeves, calves, sheep and lambs, and hogs slaughtered in 1914, 1909, and 1904. The weights of goats and kids have been included in those shown for sheep and lambs in 1914 and 1909.

Table 23

CLASS AND STATE.	AGGREGATE WEIGHTS OF ANIMALS SLAUGHTERED (POUNDS).					
	1914		1909		1904	
	Gross.	Net.	Gross.	Net.	Gross.	Net.
Beeves, total.....	7,076,145,637	3,786,382,167	8,265,991,836	4,409,718,922	7,435,407,944	4,066,264,877
California.....	323,293,859	178,023,882	356,435,368	188,099,815	269,451,905	140,280,064
Illinois.....	1,831,317,623	1,008,454,049	2,235,784,978	1,212,532,304	2,808,326,650	1,553,015,227
Indiana.....	181,213,730	96,571,044	236,639,010	121,258,641	187,492,443	98,198,579
Iowa.....	223,207,766	122,793,052	250,830,861	130,931,601	92,310,385	46,734,475
Kansas.....	916,715,069	505,538,585	1,367,945,767	729,266,917	1,035,343,904	560,279,660
Minnesota.....	168,451,248	83,735,477	124,468,131	60,982,227	111,047,546	56,163,359
Missouri.....	312,901,498	137,655,121	525,710,468	278,418,625	593,049,472	324,827,195
Nebraska.....	520,098,198	237,010,192	687,973,475	368,610,331	679,103,833	372,365,240
New York.....	743,272,656	409,199,580	800,726,860	442,372,661	678,815,662	317,495,778
Ohio.....	252,380,479	130,929,938	248,949,915	128,226,567	181,281,521	94,937,825
Pennsylvania.....	256,499,534	135,082,921	270,612,910	145,127,584	222,209,735	120,379,711
Texas.....	432,897,416	221,521,566	452,881,856	228,871,758	237,588,021	120,696,781
All other states.....	797,836,606	419,866,700	707,033,217	376,969,891	494,337,067	260,890,983

Table 23—Continued.

CLASS AND STATE.	AGGREGATE WEIGHTS OF ANIMALS SLAUGHTERED (POUNDS).					
	1914		1909		1904	
	Gross.	Net.	Gross.	Net.	Gross.	Net.
Calves, total.....	337,565,316	206,311,127	419,604,090	262,315,076	261,683,572	161,049,581
Illinois.....	74,360,172	45,777,646	82,943,030	53,987,041	46,361,659	30,758,577
Indiana.....	8,916,689	5,325,010	9,060,243	5,505,485	5,027,091	3,188,952
Kansas.....	26,890,412	16,064,742	45,227,093	27,703,216	20,800,117	12,452,770
Massachusetts.....	14,295,642	7,966,636	14,533,142	8,318,362	11,391,488	6,601,709
Minnesota.....	11,894,252	7,775,268	9,095,834	5,739,553	3,332,305	2,183,103
New Jersey.....	10,227,128	6,658,917	13,606,009	8,702,824	15,619,970	10,180,539
New York.....	59,604,341	37,471,922	57,359,816	36,791,701	40,814,290	26,538,366
Ohio.....	20,383,316	12,101,590	21,424,320	12,968,426	11,611,732	6,795,882
Pennsylvania.....	17,553,952	10,191,849	23,219,799	13,424,881	15,394,449	9,126,309
Texas.....	37,176,694	21,827,297	54,389,464	32,598,321	21,336,870	12,298,662
Wisconsin.....	11,762,528	8,106,515	14,780,228	10,225,780	3,871,702	2,597,322
All other states.....	44,500,010	27,043,735	73,965,103	46,949,506	66,122,199	38,327,390
Sheep and lambs, total.....	1,239,595,728	629,723,014	987,566,521	496,640,869	930,168,367	484,872,621
California.....	113,296,370	57,499,522	89,943,570	44,502,009	99,631,051	45,078,913
Illinois.....	306,079,329	199,144,851	310,824,306	158,420,118	311,859,161	156,616,837
Iowa.....	26,111,904	12,482,980	4,381,486	1,857,387	1,181,753	533,343
Kansas.....	119,650,226	59,516,071	87,549,179	43,816,825	62,706,567	31,623,633
Massachusetts.....	32,804,684	14,715,201	25,953,967	13,346,490	37,317,281	16,915,035
Michigan.....	10,130,365	4,782,158	6,960,398	3,508,848	4,681,500	2,350,900
Minnesota.....	17,873,462	8,511,323	11,667,016	5,655,958	17,364,584	8,429,203
Missouri.....	59,453,486	30,410,705	42,965,028	21,820,210	47,551,642	23,731,886
Nebraska.....	146,095,274	72,486,249	94,297,114	45,386,112	85,314,793	41,323,122
New Jersey.....	20,029,686	15,494,823	32,299,592	16,234,014	40,633,220	21,468,265
New York.....	140,521,113	72,958,706	155,884,208	80,668,961	121,468,439	63,450,207
Ohio.....	24,962,827	10,446,357	15,805,887	7,693,721	11,046,121	5,413,234
Oregon.....	12,581,836	5,884,384	8,366,335	3,880,016	8,205,846	3,785,452
Pennsylvania.....	33,006,842	16,102,556	35,193,651	17,361,340	30,315,321	15,128,819
Texas.....	22,635,046	11,420,844	6,487,560	2,988,800	4,201,595	2,032,765
Utah.....	10,158,693	4,912,734	4,494,730	2,187,063	2,849,810	1,414,405
Washington.....	33,503,115	15,806,582	26,349,187	13,297,291	18,071,330	8,357,339
All other states.....	35,201,570	17,146,968	28,184,407	14,015,687	34,468,023	17,219,263
Hogs, total.....	7,277,670,937	5,476,236,776	6,856,832,417	5,201,902,778	6,586,340,782	5,048,832,850
California.....	70,174,389	52,830,882	62,527,587	46,631,388	56,111,705	41,142,475
Colorado.....	58,081,786	43,716,326	58,950,395	43,953,370	24,526,280	18,406,072
Illinois.....	1,633,498,581	1,241,381,168	1,535,959,595	1,149,193,004	1,787,195,118	1,232,912,990
Indiana.....	370,686,280	286,807,844	384,178,272	287,559,449	306,632,060	244,783,417
Iowa.....	569,387,634	421,324,109	555,200,081	419,735,891	468,350,843	357,770,123
Kansas.....	567,958,750	405,925,861	836,207,888	615,127,325	693,651,184	525,654,192
Maryland.....	85,163,744	63,141,979	73,635,694	54,792,797	83,815,025	65,502,634
Massachusetts.....	314,327,969	246,411,940	348,930,075	271,834,381	394,657,071	310,294,376
Michigan.....	148,693,650	109,897,029	85,852,343	64,958,872	56,508,856	42,978,729
Minnesota.....	353,892,859	273,102,774	210,518,266	159,800,532	207,961,058	162,839,029
Missouri.....	582,365,200	446,152,081	511,926,108	398,239,822	473,519,060	373,850,330
Nebraska.....	505,997,701	369,276,188	453,734,281	355,098,890	569,359,412	424,617,248
New Jersey.....	187,027,738	139,587,289	166,930,257	125,999,812	177,574,113	140,727,525
New York.....	306,593,639	238,806,397	318,476,443	235,964,832	265,504,530	209,327,564
Ohio.....	393,274,969	298,512,665	333,645,643	261,173,211	291,857,623	228,427,393
Pennsylvania.....	283,203,738	217,544,102	214,940,692	167,762,357	193,349,941	153,204,323
Texas.....	108,156,489	78,447,373	178,034,691	139,981,280	66,510,641	49,692,252
Washington.....	75,863,170	51,031,927	50,496,743	39,289,779	28,583,671	20,913,736
Wisconsin.....	251,371,423	196,358,730	231,152,827	182,767,219	200,784,666	156,418,214
All other states.....	392,081,088	298,982,112	236,234,566	181,937,817	240,002,552	189,370,228

Total number of animals slaughtered for food in 1909.—The number of animals killed in wholesale slaughtering and meat-packing establishments does not represent the total number of animals slaughtered for food. In order to secure this total, as required by a special amendment to the act providing for the Thirteenth Census, reports were obtained from retail slaughterhouses, and to these figures were added the statistics regarding the animals slaughtered on farms and ranges secured through the census of agriculture. The number of animals of the various kinds slaughtered in 1909, both in wholesale and retail slaughterhouses and on farms and ranges, is given, by states, in Table 24. The statistics relating to the number of animals slaughtered in retail establishments and on farms and ranges were not collected in 1914.

The total number of animals slaughtered for food in the United States in 1909 was 88,358,815. Of this number, the hogs slaughtered represented 60.2 per cent; sheep and lambs, 16.7 per cent; beefs, 15.4 per cent; calves, 7.4 per cent; and goats and kids, three-tenths of 1 per cent.

The bulk of the slaughtering in 1909 was done by wholesale establishments, as 56,778,929, or almost two-thirds of the number of animals were killed in such plants. The larger number of calves, however, were slaughtered by retail establishments. It is noticeable that a larger number of hogs than of other animals were slaughtered on farms and ranges. The number of hogs slaughtered on farms and ranges represented 82.8 per cent of all animals slaughtered on farms, and 28.9 per cent of the total number of hogs slaughtered in the United States.

MANUFACTURES.

ANIMALS SLAUGHTERED FOR FOOD, IN WHOLESALE AND RETAIL SLAUGHTERHOUSES AND ON FARMS AND RANGES, BY STATES: 1909.

Table 24

STATE.	Aggregate.	TOTAL.		BEEVES.		CALVES.		SHEEP AND LAMBS.		HOGS.		ALL OTHER ANIMALS.	
		In wholesale and retail slaughter-houses.	On farms and ranges.	In wholesale and retail slaughter-houses.	On farms and ranges.	In wholesale and retail slaughter-houses.	On farms and ranges.	In wholesale and retail slaughter-houses.	On farms and ranges.	In wholesale and retail slaughter-houses.	On farms and ranges.	In wholesale and retail slaughter-houses.	On farms and ranges.
United States.....	88,358,815	69,791,543	18,567,272	12,202,782	1,408,640	5,384,376	1,131,600	14,195,173	529,526	37,841,051	15,378,517	168,161	118,989
Alabama.....	816,688	170,619	646,069	98,243	42,949	12,905	7,872	10,821	5,251	45,039	581,615	3,611	8,385
Arizona.....	124,601	94,626	29,975	44,580	10,773	9,142	1,144	11,684	8,125	17,843	3,299	11,377	6,634
Arkansas.....	806,372	132,351	674,021	58,663	38,088	12,976	8,379	9,566	5,705	48,592	616,350	2,554	5,499
California.....	2,792,928	2,583,885	209,043	618,283	36,319	177,864	50,538	1,300,010	35,915	478,842	82,707	8,886	4,001
Colorado.....	691,009	576,868	114,141	117,786	26,818	31,402	11,557	116,607	19,345	310,958	52,081	115	3,740
Connecticut.....	301,001	257,581	43,420	32,032	8,756	57,818	6,915	18,087	2,685	149,621	25,068	23	6
Delaware.....	107,841	79,199	28,642	13,087	551	10,315	414	11,374	87	44,422	27,588	1	2
District of Columbia.....	163,160	162,741	419	16,181	8	26,668	28	42,667	.....	77,223	383	.....	.....
Florida.....	437,911	115,835	322,076	64,489	22,012	2,450	1,569	8,586	1,484	39,880	294,753	430	2,558
Georgia.....	1,140,960	213,017	927,943	93,372	37,605	23,532	22,323	11,021	3,552	81,967	860,409	3,125	4,054
Idaho.....	191,601	118,577	73,024	37,347	12,216	15,377	4,789	25,037	8,494	40,801	47,437	15	88
Illinois.....	15,622,722	14,736,149	886,573	2,376,787	38,466	676,552	81,079	3,915,651	4,284	7,703,765	762,545	63,394	190
Indiana.....	3,321,520	2,622,104	699,335	391,426	27,122	145,370	21,731	76,958	3,714	2,007,981	646,581	459	187
Iowa.....	3,820,358	3,215,109	605,249	413,509	73,454	105,752	18,235	68,434	6,180	2,626,776	507,167	638	213
Kansas.....	7,546,716	7,124,338	422,378	1,460,432	30,660	233,875	11,536	1,141,531	2,399	4,265,111	377,566	17,389	217
Kentucky.....	1,267,587	497,844	769,743	103,285	19,011	44,537	4,546	33,903	10,650	314,292	733,642	1,827	1,894
Louisiana.....	678,280	355,268	323,012	155,337	26,209	126,984	2,667	12,815	3,965	58,587	287,447	1,545	2,724
Maine.....	342,655	225,868	116,787	28,337	18,755	46,205	27,896	98,542	23,277	52,763	47,319	21	40
Maryland.....	1,242,668	1,051,317	191,351	94,073	5,870	93,474	2,110	198,800	2,952	664,924	180,406	46	13
Massachusetts.....	2,259,375	2,201,482	57,893	95,123	13,521	188,212	14,187	348,040	2,412	1,569,032	27,764	1,075	19
Michigan.....	1,641,055	1,136,358	504,697	215,684	43,619	160,458	61,896	164,414	17,818	595,182	381,247	620	117
Minnesota.....	2,234,250	1,743,542	490,708	235,696	79,226	164,117	80,493	191,853	16,231	1,151,788	314,597	88	161
Mississippi.....	676,008	123,554	552,454	69,543	34,406	15,428	5,757	9,634	4,845	31,862	498,659	2,087	3,787
Missouri.....	4,883,683	3,884,508	999,175	616,614	32,059	109,154	8,779	557,843	7,461	2,600,148	949,318	749	1,558
Montana.....	303,332	227,849	75,483	65,593	19,755	31,658	8,748	77,002	13,785	53,589	33,143	7	52
Nebraska.....	4,419,371	4,108,503	310,868	729,608	42,083	80,248	5,458	1,129,725	1,763	2,162,905	261,515	17	59
Nevada.....	102,247	76,688	25,559	18,877	11,217	8,456	1,416	33,574	6,973	15,218	5,943	563	10
New Hampshire.....	106,481	58,159	48,322	11,809	9,116	22,616	10,650	9,629	5,987	14,084	22,563	21	6
New Jersey.....	2,456,109	2,366,952	89,157	88,726	3,175	173,531	14,025	502,672	1,229	1,601,579	73,709	444	19
New Mexico.....	187,068	60,289	126,779	25,787	16,316	6,775	3,658	13,590	58,839	8,561	21,929	5,576	26,037
New York.....	6,380,758	5,661,351	719,407	831,980	68,793	614,815	212,962	2,197,416	51,277	2,016,826	386,264	314	111
North Carolina.....	970,854	124,909	845,945	61,226	36,132	20,360	14,602	20,378	9,763	21,626	783,247	1,319	2,201
North Dakota.....	331,111	144,532	186,579	50,772	31,570	28,065	14,419	11,305	4,342	54,368	136,227	22	21
Ohio.....	4,167,471	3,297,213	870,258	540,592	54,040	390,368	31,180	364,809	16,764	2,001,268	768,195	176	89
Oklahoma.....	688,147	232,609	455,538	93,787	23,043	16,265	5,745	1,662	1,129	119,772	424,436	1,123	1,185
Oregon.....	566,721	378,274	188,447	108,389	24,292	24,330	40,756	128,506	15,786	115,294	102,755	1,755	4,858
Pennsylvania.....	3,766,906	2,905,164	861,742	500,637	88,505	485,555	68,936	573,107	28,218	1,343,496	675,939	2,369	144
Rhode Island.....	90,345	78,048	12,297	5,916	6,699	12,710	1,175	1,681	749	57,738	3,674	3	.....
South Carolina.....	446,984	109,963	337,021	55,327	17,657	14,173	6,669	6,527	1,409	32,699	309,922	1,237	1,864
South Dakota.....	332,911	172,307	160,604	56,420	28,475	25,983	7,034	10,348	7,246	79,538	117,781	9	68
Tennessee.....	1,117,478	314,271	803,207	97,315	33,483	17,368	9,548	32,917	13,490	164,513	742,123	2,158	4,563
Texas.....	3,347,603	2,338,043	1,009,555	804,533	64,031	333,552	22,445	97,403	9,396	1,074,975	885,260	27,575	28,423
Utah.....	259,692	195,585	64,107	52,617	8,208	18,094	5,312	94,654	16,579	29,939	31,240	381	2,798
Vermont.....	203,089	85,401	117,688	24,744	18,832	21,908	41,375	11,519	6,609	27,228	50,786	2	86
Virginia.....	944,381	372,087	572,294	63,422	20,058	47,453	5,086	35,872	9,185	225,289	537,797	51	168
Washington.....	998,018	828,023	169,991	174,019	25,087	42,673	44,233	318,083	7,380	291,229	92,600	2,019	686
West Virginia.....	253,724	235,823	18,901	53,740	18,753	31,370	5,108	21,391	8,269	147,297	206,701	25	74
Wisconsin.....	2,482,949	1,937,236	545,713	217,209	51,040	415,043	93,167	110,712	15,116	1,193,354	386,243	918	147
Wyoming.....	82,107	36,429	45,678	13,916	9,810	4,430	1,948	6,813	20,832	11,267	13,064	.....	24

PRODUCTS.

Summary for the United States.—Table 25 shows the quantity and value of the principal products of the industry as reported for the censuses of 1914, 1909, 1904, and 1899.

The total value of products increased in each of the five-year periods covered by Table 25. The most notable increase occurred during the period from 1904 to 1909, when it was over two and one-third times greater than for the period 1899 to 1904, and over one-half times greater than for the period from 1909 to 1914. There were increases in the quantities of all products in the table from 1899 to 1914, except those for cured beef and pork and oleo and other oils.

The most important product is fresh and cured meat which in 1914 was 9,676,912,496 pounds,

as compared with 9,719,065,572 pounds in 1909; 8,772,061,523 pounds in 1904; and 7,981,695,321 pounds in 1899. These figures do not include those for sausage, canned goods or meat puddings, scrapple, etc.

Lard is also an important product and includes prime steam, neutral, leaf, and all lard made from hog fats exclusively. A decrease is noted in the quantity of lard produced in 1914 of 124,378,929 pounds, or 10 per cent, as compared with that in 1909. Lard compounds and substitutes are now used largely for culinary purposes and this in a measure accounts for the decrease in lard production. The output of this product in 1914 was 396,397,950 pounds. Previous to this census no statistics were collected for this commodity. For

the value of the aggregate production in all industries of these commodities, see Table 27.

Oleo oil and stearin to the value of \$14,678,253 was produced in 1914 by establishments in this industry—a decrease in the production of the two commodities of \$8,669,408 as compared with 1909. The value of that manufactured in establishments assigned to other classification was \$2,766,938, making a total output of \$17,445,191 in 1914.

Table 25	1914	1909	1904	1899
PRODUCT.				
Total value ¹	\$1,651,965,424	\$1,355,544,431	\$913,914,624	\$783,779,101
Fresh meat:				
Beef—				
Pounds.....	3,658,333,660	4,209,196,665	3,748,055,377	2,917,653,476
Value.....	\$421,296,794	\$327,583,456	\$247,060,724	\$210,833,647
Veal—				
Pounds.....	194,698,880	252,997,078	154,212,652	84,548,128
Value.....	\$26,299,446	\$25,058,886	\$12,850,369	\$7,709,772
Mutton and lamb—				
Pounds.....	620,232,690	495,457,894	460,754,244	400,812,014
Value.....	\$74,675,627	\$50,735,116	\$36,880,455	\$32,681,457
Pork—				
Pounds.....	1,877,099,071	1,547,494,184	1,224,932,910	1,222,007,411
Value.....	\$228,535,734	\$158,714,862	\$91,749,323	\$83,934,324
Edible offal and all other fresh meat—				
Pounds.....	280,090,794			
Value.....	\$17,647,510			
Poultry, dressed—				
Pounds.....	16,575,907	257,809,083	124,307,681	80,387,411
Value.....	\$2,928,735	\$16,392,768	\$9,579,718	\$7,810,553
Cured meat:				
Beef, pickled and other cured—				
Pounds.....	91,571,753	126,477,662	136,866,697	137,588,503
Value.....	\$14,395,316	\$12,159,152	\$8,107,952	\$9,661,754
Pork, pickled and other cured—				
Pounds.....	2,929,309,741	2,829,633,003	2,922,901,962	3,138,698,378
Value.....	\$393,605,600	\$328,130,299	\$248,837,321	\$236,534,795
Canned goods—				
Pounds.....	160,798,955	121,376,837	(²)	² 112,443,021
Value.....	\$26,417,624	\$15,345,543	\$16,114,665	² \$9,166,931
Sausage:				
Canned—				
Pounds.....	74,004,380	(²)	(²)	(²)
Value.....	\$9,845,669	(²)	(²)	(²)
All other—				
Pounds.....	435,146,931	452,867,187	324,416,039	290,987,019
Value.....	\$58,349,853	\$44,540,912	\$25,056,331	\$21,304,253
Meat puddings, scrapple, head cheese, etc.:—				
Pounds.....	42,339,926	(²)	(²)	(²)
Value.....	\$4,488,461	(²)	(²)	(²)
Lard, oils, and fats:				
Lard—				
Pounds.....	1,119,188,675	1,243,567,604	1,169,086,400	1,019,781,839
Value.....	\$120,414,007	\$134,396,587	\$82,540,964	\$61,140,234
Lard compounds and substitutes—				
Pounds.....	396,397,950	(²)	(²)	(²)
Value.....	\$33,037,467	(²)	(²)	(²)
Oleo oil—				
Gallons.....	16,501,585	19,692,172	19,454,799	19,111,120
Value.....	\$11,925,832	\$16,475,728	\$10,201,911	\$11,482,542
Other oils—				
Gallons.....	6,715,497	11,343,186	4,893,133	8,240,569
Value.....	\$4,009,602	\$6,350,745	\$2,595,951	\$3,438,358
Tallow—				
Pounds.....	193,615,601			
Value.....	\$12,871,206			
Oleo stock—				
Pounds.....	15,998,534	202,844,139	(²)	(²)
Value.....	\$1,361,550	\$13,499,659	(²)	(²)
Soap stock—				
Pounds.....	76,003,670	(²)	(²)	(²)
Value.....	\$3,742,747	(²)	(²)	(²)
Stearin, lard and oleo:				
Pounds.....	30,091,991	54,957,997	(²)	(²)
Value.....	\$2,752,421	\$6,871,935	(²)	(²)
Oleomargarine:				
Pounds.....	60,387,881	42,912,466	(²)	(²)
Value.....	\$8,818,557	\$5,963,931	(²)	(²)
Sausage casings:				
Pounds.....	69,453,298	(²)	(²)	(²)
Value.....	\$9,077,593	(²)	(²)	(²)
Hoofs, horns, and horn tips, strips, etc.:—				
Pounds.....	78,125,830	(²)	(²)	(²)
Value.....	\$944,634	(²)	(²)	(²)

¹ In addition, for 1914, edible meat products to the value of \$91,804 and inedible products to the value of \$3,639 were reported by establishments assigned to the sausage industry.

² Comparable figures not available.

³ Canned beef. Canned goods not reported separately.

⁴ Not reported separately.

Table 25—Continued.

PRODUCT.	1914	1909	1904	1899
Fertilizers and fertilizer materials:				
Tons (2,000 pounds)....	294,388	362,136	369,074	¹ 168,505
Value.....	\$8,737,009	\$8,726,818	\$7,204,061	¹ \$3,300,042
Glue and gelatin:				
Pounds.....	40,844,650	27,936,635	17,526,456	(²)
Value.....	\$3,088,764	\$1,944,338	\$1,087,719	(²)
Hides, skins, and pelts:				
Cattle—				
Number.....	7,158,862			
Pounds.....	415,890,714			
Value.....	\$99,958,593			
Calf—				
Number.....	1,464,430	9,560,138	8,039,204	6,249,414
Pounds.....	18,047,761	504,563,630	456,443,857	335,968,207
Value.....	\$3,512,610	\$68,401,515	\$44,206,107	\$33,883,026
Sheep and lambs and goats and kids—				
Number.....	15,916,618	11,724,667	² 11,714,549	(²)
Value.....	\$13,624,046	\$11,425,235	² \$8,064,643	(²)
All other, value.....	\$389,068	(²)	(²)	(²)
Wool:				
Pounds.....	26,432,398	21,858,926	16,377,333	13,176,686
Value.....	\$7,935,212	\$8,327,095	\$5,229,521	\$3,394,439
All other products, including custom work, value.....	\$59,775,137	\$94,499,800	\$55,604,889	\$47,473,064

¹ Fertilizers only. Fertilizer materials not reported separately.

² Not reported separately.

³ Goat and kid skins not included, as figures are not available. Includes pelts purchased for wool pulling.

Hides, skins, and pelts constitute another important product. There was a decrease of 936,846, or 9.8 per cent, in the number, and 70,025,455 pounds, or 13.9 per cent, in the weight of the aggregate number and weight, respectively, of cattle and calf hides in 1914 as compared with 1909. The number of sheep and lamb and goat and kid skins increased 4,191,951, or 35.8 per cent, during the period 1909 to 1914. In addition to the number of calf and sheep and lamb skins shown in the table, there were some sold on the carcass.

The total number of beeves, calves, sheep and lambs and goats and kids slaughtered for food in 1914 as reported to this bureau was 26,536,722, which represented approximately the number of hides produced in this industry.

Canned goods, consisting of beef, pork, meat products, and other canned goods is a growing product of the industry, as shown by the increase in the output at each period given in the table. In 1914 this product included 120,972,233 pounds of canned beef, valued at \$20,073,934; 9,954,748 pounds of canned pork, valued at \$2,299,307; 20,379,106 pounds of other meat products, valued at \$2,658,159; and 9,492,868 pounds of other canned goods, valued at \$1,386,224. These figures do not include 74,004,380 pounds of canned sausage valued at \$9,845,669. In 1909 there was no segregation of canned goods, but in 1904 there were 98,663,931 pounds of canned beef reported, valued at \$7,697,815, and all other canned goods to the value of \$8,416,850. In 1899 only canned beef was reported. There were no separate statistics collected for canned sausage previous to the 1914 census.

Oleomargarine, for which figures were first reported separately at the census of 1909, increased 17,475,415 pounds, in quantity, and \$2,854,576 in

value for the five-year period. The average price per pound, however, increased only seven-tenths of 1 per cent during this period. The value of the total production as reported to this bureau is shown in Table 27.

The quantity of wool pulled from pelts of animals slaughtered in the establishments reporting was 4,573,472 pounds, in 1914, or 20.9 per cent greater than the quantity reported in 1909, but the value decreased \$388,883, or 4.7 per cent. The average price per pound was 8.1 cents less in 1914 than in 1909.

The value of wool pulled in establishments assigned to other classifications in 1914 was \$8,472,438, that pulled in slaughtering and meat-packing establishments, \$7,938,212, making a total value of \$16,410,650; as reported to the Census Bureau for the United States.

By-products, such as ice, peanut butter, potato chips, pickles and preserves, cooperage, canned fish and vegetables, vinegar, confectionery, chewing gum, butter, cheese, wool pulled from purchased pelts, and repairs to railroad cars, amounting to \$5,427,322, were reported by this industry in 1914. This value is included in "all other products." The value of soap, which is very large, is also included under "all other products," to avoid disclosing the operations of individual establishments.

The special schedule used in 1914 provided for separate data for the following products: Dressed poultry; game; canned sausage; meat puddings, scrapple, etc.; lard compounds and substitutes; soap stock; sausage casings; hoofs, horns, etc.; calf skins; and all other skins. The total value of these products was \$67,967,144.

Table 26 shows the percentage that pork, beef, mutton and lamb, veal, and edible offal, respectively, formed of the total in 1914, 1909, and 1904, and the percentage of increase for the three census periods.

KIND.	PER CENT OF TOTAL.			PER CENT OF INCREASE. ¹		
	1914	1909	1904	1904-1914	1909-1914	1904-1909
Total.....	100.0	100.0	100.0	10.3	-0.4	10.8
Pork, fresh and cured.....	49.7	45.0	47.3	15.9	9.8	5.5
Beef, fresh and cured.....	38.8	44.8	44.3	-3.5	-13.5	11.6
Mutton and lamb.....	6.5	5.1	5.3	36.6	27.0	7.5
Veal.....	2.0	2.6	1.8	26.3	-23.0	64.1
Edible offal and all other fresh meat.....	3.1	2.7	1.4	138.7	15.1	107.4

¹ A minus sign (-) denotes decrease.

Pork was the chief product at each census, though the per cent of increase was not as great as for some of the other products. While the quantity of edible offal and all other fresh meat, which includes poultry and game, has increased rapidly, the production forms a very small proportion of the total for the five classes of products. The variation in the per cent of increase in this item is due largely to the lack of uni-

formity in reporting edible offal. Some establishments included it with fresh beef, veal, pork, and mutton and lamb at one census and with "all other fresh meat" at a subsequent census. The schedule for 1914 required edible offal to be reported as a separate item.

In addition to the products of establishments assigned to the slaughtering and meat-packing industry, meat products consisting chiefly of boiled hams and shoulders and corned beef, valued at \$6,944,555, were reported by establishments classified as "food preparations, not elsewhere specified."

Subsidiary products.—Many establishments in the slaughtering and meat-packing industry make large quantities of subsidiary products, some of which form the chief product of other industries distinguished by the census. A number of the large concerns kept separate accounts and made separate reports for the branches or departments making certain of these subsidiary products, such as soap; fertilizers; lard compounds and substitutes; condensed milk; canned and preserved fruits and vegetables; paper and wood pulp; job printing products; ice; glue; petroleum products; pickles; steam cars; leather, tanned, curried, and finished; sausage; chemicals; wooden boxes; grease and tallow; dressed poultry; upholstery materials; sauerkraut; butter; butter reworked; oleomargarine; and cottonseed and other oils. The aggregate value of these products in 1914 was \$58,951,503, and in 1909, \$32,661,669. The value of certain of these subsidiary products is shown for 1914 in Table 27.

PRODUCT.	Total value of products.	VALUE OF PRODUCTS IN ESTABLISHMENTS—		
		Engaged primarily in manufacturing the product specified. ¹	In the slaughtering and meat-packing industry.	Assigned to other classifications.
Fertilizers.....	\$176,065,335	\$153,196,152	* \$3,737,009	\$14,132,174
Glue and gelatin.....	19,725,703	13,732,824	3,088,764	2,904,115
Lard.....	122,848,177	146,873	120,414,007	2,287,297
Lard compounds and substitutes.....	89,441,263	47,661,872	33,037,467	8,741,924
Oleomargarine.....	23,898,341	15,079,784	8,818,557	(²)
Sausage.....	90,391,714	22,013,506	68,195,522	182,686
Sausage casings.....	10,146,208	1,068,615	9,077,593	(³)
Soap.....	135,304,499	127,942,441	(⁴)	* 7,362,058
PER CENT OF TOTAL.				
Fertilizers.....	100.0	87.0	* 5.0	8.0
Glue and gelatin.....	100.0	69.6	15.6	14.8
Lard.....	100.0	0.1	98.0	1.9
Lard compound and substitutes.....	100.0	53.3	36.9	9.8
Oleomargarine.....	100.0	63.1	36.9	(²)
Sausage.....	100.0	24.4	75.4	0.2
Sausage casings.....	100.0	10.5	89.5	(³)
Soap.....	100.0	94.6	(⁴)	* 5.4

¹ Includes in some cases products other than those specified.

² Includes a large amount of fertilizer materials.

³ Figures can not be shown without disclosing individual operations.

⁴ Includes canned sausage.

⁵ Includes that manufactured in slaughtering and meat-packing establishments.

Products, by states.—Table 28 shows, by states, the quantity and value of certain leading products of the slaughtering and meat-packing industry in 1914, and the quantity produced in 1909 and 1904.

Table 28 PRODUCT AND STATE.	1914		1909	1904
	Value.	Quantity.	Quantity.	Quantity.
		<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Beef, fresh, total.....	\$421,206,794	3,658,333,660	4,209,196,668	3,748,055,377
California.....	19,928,654	178,314,652	186,315,779	140,301,999
Illinois.....	117,139,784	1,000,942,830	1,142,920,916	1,376,889,532
Indiana.....	10,532,894	91,435,251	119,685,578	93,224,422
Iowa.....	13,676,747	118,567,051	123,780,302	41,675,822
Kansas.....	53,055,067	474,292,677	686,615,803	509,978,750
Minnesota.....	7,714,340	76,992,124	59,276,609	55,358,469
Missouri.....	20,469,895	183,047,055	273,808,501	315,665,100
Nebraska.....	30,703,764	272,491,272	354,358,419	337,481,262
New York.....	53,570,690	402,728,421	429,981,714	310,605,538
Ohio.....	13,009,363	118,627,111	119,597,666	89,925,370
Pennsylvania.....	16,693,646	130,759,894	136,838,202	117,319,123
Texas.....	19,558,100	206,657,923	208,086,588	105,988,298
All other states.....	45,243,844	402,577,399	367,930,591	253,641,722
Veal, fresh, total.....	26,299,446	194,698,880	252,997,078	154,212,652
Illinois.....	5,474,481	41,388,494	51,359,193	30,348,138
Indiana.....	731,375	5,345,353	5,505,181	3,178,656
Kansas.....	1,685,249	14,797,191	25,731,826	9,737,824
Massachusetts.....	1,042,344	7,966,636	8,317,482	6,601,707
Minnesota.....	875,264	6,987,360	5,765,536	2,120,934
New Jersey.....	1,106,954	6,645,893	8,702,274	10,092,263
New York.....	5,820,977	37,462,344	36,610,306	26,400,456
Ohio.....	1,569,471	11,157,758	12,921,896	6,680,682
Pennsylvania.....	1,529,528	9,967,655	13,405,455	9,097,823
Texas.....	1,969,967	19,089,516	29,308,668	9,674,766
Wisconsin.....	1,123,926	8,010,982	9,615,384	2,594,829
All other states.....	3,369,910	25,879,098	45,753,859	37,684,544
Mutton, fresh, total.....	74,675,627	629,232,690	495,457,894	460,754,244
California.....	6,874,334	59,622,015	44,220,813	38,021,994
Illinois.....	23,094,431	197,647,411	157,615,125	160,511,123
Iowa.....	1,270,068	12,539,457	1,848,011	532,745
Kansas.....	6,878,662	58,814,735	43,884,755	30,248,693
Massachusetts.....	1,883,045	14,715,201	13,346,470	16,915,035
Minnesota.....	858,878	8,511,931	5,655,124	8,283,313
Missouri.....	3,409,093	30,382,856	21,896,982	23,555,759
Nebraska.....	7,803,765	72,208,015	45,101,857	42,556,050
New Jersey.....	2,297,990	15,500,648	16,228,067	21,468,265
New York.....	10,248,276	73,819,403	80,774,979	63,435,207
Ohio.....	1,169,054	9,245,870	7,738,777	5,406,034
Pennsylvania.....	2,146,694	16,142,452	17,316,377	15,035,808
Texas.....	1,089,633	11,179,234	2,846,112	1,670,045
Washington.....	1,887,127	15,187,952	13,393,776	8,365,285
All other states.....	3,764,777	33,815,510	23,590,669	24,790,988
Pork, fresh, total.....	226,535,734	1,877,099,071	1,547,494,184	1,224,932,910
California.....	5,232,060	40,125,668	32,204,886	22,796,629
Illinois.....	43,380,794	374,315,938	303,896,802	260,619,428
Indiana.....	11,549,830	93,434,549	79,377,583	27,391,374
Iowa.....	12,284,615	103,461,549	100,113,209	41,260,001
Kansas.....	13,369,953	116,002,875	150,199,802	81,016,571
Massachusetts.....	11,185,062	80,977,605	66,468,331	82,117,964
Minnesota.....	11,808,814	110,312,690	45,709,115	43,542,306
Missouri.....	18,746,424	164,944,862	138,974,435	118,797,174
Nebraska.....	11,527,798	97,872,530	98,834,601	83,484,004
New Jersey.....	12,925,302	106,261,343	96,606,828	121,630,717
New York.....	14,987,818	124,190,102	123,540,054	123,177,559
Ohio.....	12,669,369	101,775,391	60,320,259	49,033,932
Pennsylvania.....	12,754,612	91,731,688	50,210,292	37,333,942
Wisconsin.....	5,049,985	41,073,293	48,264,738	35,997,546
All other states.....	29,083,298	230,618,988	152,873,789	96,733,763
Pork, pickled, and other cured, total.....	393,605,600	2,929,309,741	2,829,633,003	2,922,901,962
California.....	4,415,077	24,825,588	13,964,304	23,183,338
Colorado.....	3,500,221	23,106,330	20,530,615	11,087,849
Illinois.....	110,501,961	854,815,194	720,216,994	885,740,292
Indiana.....	15,495,892	124,924,957	148,474,672	165,587,061
Iowa.....	29,343,351	233,138,198	219,106,133	215,425,256
Kansas.....	35,564,992	269,884,018	364,998,556	303,954,794
Maryland.....	5,501,956	36,156,127	28,231,007	30,676,342
Massachusetts.....	16,541,132	119,834,341	122,689,181	167,090,994
Michigan.....	5,697,111	43,017,100	36,145,040	30,277,890
Minnesota.....	16,430,999	115,033,007	82,480,987	71,741,762
Missouri.....	28,393,231	209,922,094	222,224,021	195,757,762
Nebraska.....	26,651,723	202,562,434	184,213,423	250,832,315
New Jersey.....	5,038,813	33,894,116	49,690,559	19,325,603
New York.....	18,589,367	118,537,294	134,425,208	106,495,914
Ohio.....	16,632,373	121,188,242	121,988,353	116,433,401
Pennsylvania.....	12,174,586	83,007,657	78,559,883	78,070,062
Texas.....	6,186,663	39,477,022	71,219,957	26,259,612
Washington.....	3,064,477	22,352,555	17,116,659	10,900,124
Wisconsin.....	13,432,798	99,775,805	106,390,708	100,474,432
All other states.....	20,448,877	153,857,662	86,966,743	113,587,159
Sausage, ¹ total.....	58,349,853	435,146,931	452,867,187	324,416,039
California.....	1,159,846	8,604,082	6,195,723	4,337,752
Illinois.....	16,030,339	112,639,102	113,631,970	99,194,762
Indiana.....	1,915,995	15,895,177	15,754,885	15,393,879
Iowa.....	2,111,680	17,820,025	15,541,624	9,910,400
Kansas.....	2,004,456	17,706,704	31,200,707	24,169,700
Maryland.....	1,338,165	10,666,851	11,713,817	8,362,360
Massachusetts.....	4,289,953	27,854,557	23,074,968	17,501,829
Michigan.....	1,103,762	8,409,965	8,174,244	3,022,472

¹ These figures do not include "canned sausage," to avoid disclosure of individual operations. See Table 26 for data "canned sausage."

Table 28—Continued. PRODUCT AND STATE.	1914		1909	1904
	Value.	Quantity.	Quantity.	Quantity.
		<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Minnesota.....	\$1,114,112	8,845,380	7,632,698	8,151,961
Missouri.....	1,984,958	16,183,674	18,022,911	19,272,945
Nebraska.....	1,739,912	12,267,326	27,335,144	18,192,410
New Jersey.....	2,087,241	13,525,180	15,344,144	3,586,223
New York.....	5,819,045	41,572,857	39,582,116	12,481,377
Ohio.....	3,692,691	31,047,288	24,240,181	17,462,744
Pennsylvania.....	5,719,326	40,669,573	42,599,651	23,067,722
Texas.....	979,923	8,847,610	12,916,425	8,497,917
Wisconsin.....	1,454,827	11,958,878	10,737,835	12,621,837
All other states.....	3,803,442	30,632,702	28,998,144	19,307,790
Lard, total.....	120,414,007	1,119,188,675	1,243,567,604	1,169,096,400
Illinois.....	36,870,104	335,695,330	403,177,806	459,577,415
Indiana.....	4,902,438	46,374,440	46,991,294	43,909,730
Iowa.....	6,491,245	59,038,166	71,084,771	65,322,473
Kansas.....	9,050,920	83,733,215	148,498,252	132,557,097
Massachusetts.....	7,226,817	66,849,628	60,840,711	84,617,813
Michigan.....	2,744,866	27,342,302	13,351,255	8,146,572
Minnesota.....	4,263,173	40,311,585	21,429,517	26,435,536
Missouri.....	7,573,170	72,410,760	48,835,133	33,215,290
Nebraska.....	7,204,757	66,595,695	89,851,989	84,709,231
New York.....	4,418,820	40,496,413	47,042,820	35,098,711
Ohio.....	7,147,098	67,135,365	58,518,712	49,180,699
Pennsylvania.....	5,156,619	47,191,604	36,121,032	44,129,473
Washington.....	1,702,903	22,914,041	9,050,789	8,763,666
Wisconsin.....	3,987,217	37,014,963	19,173,185	18,559,549
All other states.....	11,673,460	106,155,168	169,780,397	94,649,138
Hides, cattle and calf, total.....	73,471,203	434,538,475	504,563,930	456,443,857
California.....	3,255,603	19,754,487	21,134,504	14,875,563
Illinois.....	20,043,969	111,520,999	135,617,679	169,907,637
Indiana.....	1,973,134	11,006,666	14,299,431	11,428,871
Iowa.....	2,159,799	12,340,379	14,727,035	6,562,413
Kansas.....	9,172,496	55,854,920	70,719,102	58,854,994
Massachusetts.....	829,563	5,458,472	4,672,435	6,149,456
Minnesota.....	1,742,967	10,027,859	7,240,972	6,587,904
Missouri.....	3,544,438	22,446,957	32,406,006	37,971,566
Nebraska.....	5,100,773	29,510,433	39,975,521	39,860,519
New York.....	7,570,598	45,455,486	49,577,570	36,892,215
Ohio.....	2,681,682	17,820,624	16,900,033	11,638,587
Pennsylvania.....	2,787,945	16,022,093	19,170,659	14,619,934
Texas.....	4,999,680	29,457,278	27,475,291	17,766,494
Washington.....	908,154	5,435,323	7,325,634	4,416,270
Wisconsin.....	835,002	4,939,085	4,613,282	3,556,922
All other states.....	5,759,410	36,625,964	29,796,646	21,260,601
Sheep pelts, total.....	13,619,154	15,907,899	11,601,308	11,344,544
California.....	875,883	1,406,831	1,070,801	990,514
Illinois.....	3,927,174	4,880,057	3,619,577	3,632,161
Iowa.....	351,967	207,648	49,534	13,070
Kansas.....	1,537,843	1,559,141	1,117,653	761,595
Massachusetts.....	135,327	370,835	341,956	423,080
Michigan.....	128,392	125,534	88,285	44,510
Minnesota.....	202,227	196,098	132,574	188,791
Missouri.....	870,028	776,765	261,627	560,261
Nebraska.....	2,056,889	1,796,965	1,127,937	956,686
New Jersey.....	439,390	426,063	423,624	502,642
New York.....	1,267,608	1,992,520	1,913,895	2,069,593
Ohio.....	292,851	300,259	232,775	148,118
Oregon.....	103,966	141,892	92,038	13,267
Pennsylvania.....	433,704	436,880	444,480	363,494
Texas.....	169,759	263,471	77,661	49,831
Utah.....	102,481	115,501	47,763	26,371
Washington.....	334,931	362,854	290,298	179,819
All other states.....	399,234	428,577	338,630	410,781

The prominence of Illinois as a meat-producing state is indicated by the fact that the state produced the largest quantities of each of the products shown in the table for the last three censuses. The percentage that the total for the state, however, forms of the total for the United States for all the products except veal was slightly less in 1914 than in 1909.

There was a decrease in the production of fresh beef in all states shown in the table, except Minnesota, from 1909 to 1914, and in Illinois, Indiana, Kansas, Missouri, and Nebraska for the decade. In the production of veal all states except New Jersey show material gains for the decade, though for the later census period there was a decrease in all states except Minnesota and New York. During the decade the production of mutton and lamb increased in all states

except Massachusetts and New Jersey. These two states are also the only ones that show a decrease for this period in the output of fresh pork. There were increases in the production of cured pork in all states for this period except Illinois, Indiana, Kansas, Massachusetts, Nebraska, and Wisconsin. The output of sausage increased during the decade in all states except Kansas, Missouri, Nebraska, and Wisconsin. Five states, Illinois, Iowa, Kansas, Massachusetts, and Nebraska show a decrease in the production of lard in 1914 as compared with 1904.

There was a decrease for the decade in the production of cattle and calf hides in Illinois, Indiana, Kansas, Massachusetts, Missouri, and Nebraska. During the period from 1909 to 1914, however, there was a decrease in the production of hides in all states except Massachusetts, Minnesota, Ohio, Texas, and Wisconsin. The total number of sheep pelts increased 4,216,591, or 36.1 per cent, from 1909 to 1914, and 346,764, or 3.1 per cent, from 1904 to 1909. All states show gains in this product in 1914 as compared with 1909 except Pennsylvania.

Table 29 shows the total value of products of the establishments engaged primarily in the manufacture of sausage in 11 leading states for 1914, 1909, and 1904. The value is the total for all products of each establishment, and, while it represents sausage principally, it necessarily includes the value of some other products. It does not include any amounts for slaughtering and meat-packing establishments. Therefore, in order to ascertain the total value of sausage manufactured in the establishments covered by the census, it is necessary to associate the data in this table with those in Table 27.

STATE.	VALUE OF PRODUCTS OF SAUSAGE-MANUFACTURING ESTABLISHMENTS.			Per cent of increase, 1904-1914.
	1914	1909	1904	
United States.....	\$22,013,506	\$15,023,670	\$8,122,904	171.0
New York.....	3,869,497	2,057,107	2,331,719	66.0
Illinois.....	3,868,144	3,228,944	995,171	238.7
Massachusetts.....	2,722,167	1,871,473	913,706	197.9
Wisconsin.....	2,517,271	1,514,741	508,496	395.0
Ohio.....	1,713,983	1,008,732	426,674	302.6
New Jersey.....	1,299,132	1,137,694	515,534	152.0
Rhode Island.....	972,957	279,641	157,221	518.8
Pennsylvania.....	790,112	744,228	779,789	1.3
Connecticut.....	765,313	724,953	243,936	213.7
Michigan.....	601,178	592,913	162,370	270.3
California.....	511,862	326,726	217,062	135.8
All other states.....	2,381,890	1,536,518	872,226	173.1

¹ Includes "canned sausage."

Exports and imports.—Table 30 shows, for the years ending June 30, 1915, 1910, and 1905, the value of the exports and imports of different classes of meats and meat products. These statistics have been compiled from the Statistical Abstract of the United States, issued by the Bureau of Foreign and Domestic Commerce, Department of Commerce.

The total value of exports presented in the table exceeded that of imports by \$74,984,261 in 1915, by \$10,427,436 in 1910, and by \$96,826,515 in 1905. There was a decrease of \$34,913,377 in exports from 1905 to 1910, but for the later period—1910 to 1915—an increase of \$81,718,340 is noted. The total value of imports, however, increased, for the periods shown in the table, \$51,485,702 from 1905 to 1910, and \$17,161,515 from 1910 to 1915. Hog products represented the largest value of exported products, and hides and skins the largest of the imported products for each period presented. In 1915 hog products formed 63.8 per cent; in 1910, 62.8 per cent; and in 1905, 62.5 per cent, of the total for all products exported. Imported hides and skins formed 73.7 per cent of the total imports in 1915, 90.3 per cent in 1910, and 89 per cent in 1905.

Table 30

CLASS.	YEAR ENDING JUNE 30—		
	1915	1910	1905
EXPORTS.			
Total value.....	\$216,395,164	\$134,676,824	\$169,590,201
Beef products:			
Canned.....	11,973,530	1,678,452	6,588,958
Fresh.....	21,731,633	7,733,761	22,138,365
Pickled and other cured.....	3,382,670	2,783,701	3,109,361
Tallow.....	1,386,445	1,779,615	3,022,173
Oleo oil.....	9,341,188	14,205,080	11,485,145
Oleomargarine.....	617,035	349,972	711,038
Hog products:			
Bacon.....	47,326,129	18,381,050	25,428,961
Hams and shoulders, cured.....	29,049,931	17,837,375	21,562,204
Pork, canned.....	745,928	459,843	993,394
Pork, fresh.....	478,801	126,888	1,291,794
Pork, pickled.....	4,911,307	4,421,844	9,412,034
Lard.....	52,440,133	43,301,156	47,243,181
Neutral lard.....	3,022,321	(²)	(²)
Mutton.....	448,221	213,477	52,503
Sausage:			
Canned.....	307,726	627,669	671,241
All other.....	845,661		
All other meat products:			
Canned.....	2,192,464	1,030,081	1,974,693
Stearin from animal fats.....	1,033,695	1,361,833	2,267,359
All other.....	2,412,842		
Lard compounds and substitutes.....	6,045,752	6,887,738	3,613,235
Hides and skins, except fur skins, raw or uncured.....	4,685,724	1,738,216	1,051,641
Glue.....	298,136	261,766	279,534
Oil, lard.....	111,637	131,241	154,409
Hoofs, horns and horn tips, strips and waste.....	* 50,978	150,371	181,203
Grease, lubricating.....	2,324,395	4,612,426	3,710,907
Soap stock and other.....	4,266,097		
Sausage casings.....	4,859,815	4,503,339	2,646,868
IMPORTS.			
Total value.....	141,410,903	124,249,388	72,763,686
Meat products:			
Fresh meat—			
Beef and veal.....	* 16,942,661	(³)	(³)
Mutton and lamb.....	* 1,474,422		
Pork.....	* 2,011,065		
Bacon and hams.....	* 1,161,090		
Meats, prepared and preserved.....	* 1,193,268		
Sausage, bologna.....	53,660	127,274	147,119
Sausage casings.....	2,944,501	2,604,895	836,323
All other.....	2,561,906	1,086,966	726,664
Grease and oils.....	2,031,923	1,522,327	1,170,514
Hides and skins, not fur skins.....	104,177,106	* 112,247,836	64,764,146
Glue.....	824,136	861,888	701,847
Bones, hoofs, and horns, unmanufactured.....	911,473	1,067,911	926,505
Bristles, crude, not sorted, bunched, or prepared.....	3,336	12,987	4,054
Bristles, sorted, bunched, or prepared.....	3,609,748	3,111,872	2,366,444
Hide cuttings, raw, and glue stock.....	1,510,608	1,605,432	1,120,076

¹ Includes neutral lard.

² Included in oleo oil.

³ Includes bone, manufactures of, as in 1910 and 1905.

⁴ Free of duty on and after Oct. 4, 1913.

⁵ Included in "all other."

⁶ Free of duty on and after Aug. 6, 1909.

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Table 31 shows for 1914, 1909, and 1904, by states, the number of establishments, average number of wage earners, primary horsepower, wages, cost of materials, and value of products, as reported for the slaughtering and meat-packing industry. Table 32 presents for 1914, by states, the more detailed statistics for the industry.

STATE.	Census year.	Number of establishments.	Wage earners (average number).	Primary horse-power.	Wages.	Cost of materials.	Value of products.	STATE.	Census year.	Number of establishments.	Wage earners (average number).	Primary horse-power.	Wages.	Cost of materials.	Value of products.
					Expressed in thousands.								Expressed in thousands.		
United States....	1914	1,279	98,832	253,066	\$62,136	\$1,441,663	\$1,651,965	Missouri.....	1914	31	5,152	15,378	\$3,423	\$84,335	\$91,606
	1909	1,221	87,813	202,432	50,404	1,191,438	1,355,544		1909	37	4,049	11,620	2,649	72,005	79,326
	1904	929	74,134	115,956	40,327	805,857	913,915		1904	33	4,218	7,632	2,369	54,042	60,031
Alabama.....	1914	7	122	897	48	592	703	Montana.....	1914	8	96	299	101	1,717	2,120
	1909	4	47	795	25	198	320		1909	9	105	316	92	1,781	2,054
	1904								1904						
California.....	1914	81	2,172	7,018	1,770	40,831	49,500	Nebraska.....	1914	10	5,713	15,486	3,697	94,173	104,503
	1909	74	1,601	3,762	1,276	28,224	33,953		1909	15	6,009	11,863	3,369	75,346	92,283
	1904	59	1,263	2,043	891	18,619	21,796		1904	16	5,585	6,303	3,157	61,206	69,243
Colorado.....	1914	16	777	2,467	480	10,687	12,726	New Hampshire....	1914	5	18	35	9	155	179
	1909	13	659	2,450	389	8,295	9,657		1909	4	9	28	6	65	78
	1904	11	247	888	175	2,782	3,324		1904						
Connecticut.....	1914	5	384	333	226	3,923	4,451	New Jersey.....	1914	56	2,033	6,597	1,472	35,310	38,809
	1909	6	340	255	185	3,404	8,847		1909	61	1,707	3,134	1,213	32,824	36,446
	1904	4	311	310	166	2,668	2,974		1904	39	678	754	446	15,680	17,268
Delaware.....	1914	19	125	504	82	1,499	1,711	New York.....	1914	184	6,245	16,189	4,610	127,282	144,236
	1909	19	82	212	63	1,231	1,372		1909	150	5,847	12,897	4,192	108,060	125,073
	1904	15	47	160	26	477	548		1904	101	3,500	6,740	2,423	65,289	73,218
Florida.....	1914	11	54	144	32	789	925	Ohio.....	1914	152	3,480	12,356	1,381	58,297	64,960
	1909	11	32		20	392	467		1909	137	2,974	9,431	1,780	43,040	49,795
	1904								1904	88	2,237	4,172	1,309	25,022	28,729
Idaho.....	1914	9	81	227	79	714	981	Oregon.....	1914	14	442	1,344	309	6,202	7,487
	1909	4	39	115	33	451	532		1909	14	366	752	280	5,015	5,899
	1904	3	10	22	8	120	159		1904	10	246	327	155	2,390	2,907
Illinois.....	1914	70	31,315	66,598	19,286	408,895	485,362	Pennsylvania.....	1914	146	3,616	11,883	2,492	57,006	65,191
	1909	75	26,344	55,661	14,356	341,348	386,366		1909	155	2,940	11,741	1,940	44,247	51,107
	1904	68	26,953	38,939	14,561	279,855	317,206		1904	156	2,413	6,991	1,470	27,784	32,321
Indiana.....	1914	65	4,481	9,844	2,497	46,262	51,022	Rhode Island.....	1914	10	190	336</			

- 1 Figures can not be shown without disclosing operations of individual establishments.
- 2 Includes two establishments, in the sausage industry, to avoid disclosing operations of individual establishments.
- 3 Includes one establishment in the sausage industry, to avoid disclosing operations of individual establishments.
- 4 Excludes one establishment, to avoid disclosing individual operations.
- 5 Excludes two establishments, to avoid disclosing individual operations.

MANUFACTURES.

TABLE 32.—DETAIL STATISTICS FOR THE SLAUGHTERING

		PERSONS ENGAGED IN THE INDUSTRY.										WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.							
STATE.		Number of establishments.	Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Average number.	Wage earners.		Total.	16 and over.		Under 16.		Capital.			
						Male.	Female.			Number 15th day of—		Male.	Female.	Male.	Female.				
										Maximum month.							Minimum month.		
1	United States.....	1,279	121,729	1,157	2,051	17,182	2,507	98,832	De 108,440	Au 91,292	105,193	98,103	6,831	204	55	\$534,273,563			
2	Alabama.....	7	141	2	13	2	2	122	Au 136	Ap 110	115	118			2	488,258			
3	Arkansas.....	3	9					6	(*) 6	(*) 6	6	6				9,500			
4	California.....	81	3,017	73	115	600	57	2,172	Mh 2,251	Au 2,089	2,184	2,108	67	7	2	10,131,148			
5	Colorado.....	16	979	16	33	136	17	777	Je 830	Se 685	721	693	24	4		3,672,778			
6	Connecticut.....	5	429	3	3	31	8	384	Ja 463	Se 335	404	404				1,642,785			
7	Delaware.....	19	173	21	7	16	4	125	De 134	My 115	136	136				739,145			
8	Florida.....	11	78	11	3	9	1	54	Au 58	Mh 49	52	52				114,277			
9	Idaho.....	9	107	4	11	11		81	Se 85	De 76	78	78				520,522			
10	Illinois.....	70	39,298	33	342	6,630	983	31,315	De 35,366	My 28,264	34,658	31,102	3,500	18	38	210,561,104			
11	Indiana.....	65	4,947	73	86	267	40	4,481	Ja 5,272	My 3,961	4,820	4,610	292	13	5	14,297,477			
12	Iowa.....	28	5,430	27	82	815	93	4,413	De 5,141	Se 3,987	4,829	4,462	313	54		18,472,896			
13	Kansas.....	26	12,130	17	75	1,973	181	9,884	Ja 11,015	Au 8,981	10,414	9,570	839	5		47,098,203			
14	Kentucky.....	28	296	37	13	22	1	223	Je 232	Se 219	226	225		1		730,780			
15	Louisiana.....	4	239	2	7	10	1	219	Au 239	Ap 195	205	204		1		599,809			
16	Maine.....	21	157	26	6	6	4	115	Ja 122	My 110	121	121				193,441			
17	Maryland.....	46	1,543	52	56	197	17	1,221	Fe 1,271	Oc 1,170	1,221	1,210	7	3	1	4,419,828			
18	Massachusetts.....	46	3,737	34	52	368	50	3,233	Ja 3,659	My 2,996	3,433	3,391	38	4		18,470,686			
19	Michigan.....	17	1,318	11	30	131	34	1,112	De 1,174	Ap 1,022	1,243	1,241	2			4,252,977			
20	Minnesota.....	19	3,069	18	34	407	45	2,565	De 3,010	My 2,201	2,517	2,455	62			9,087,755			
21	Missouri.....	31	5,811	13	122	451	73	5,152	No 5,620	Au 4,630	5,212	5,005	202	5		20,260,193			
22	Montana.....	8	138		9	26	7	96	Au 99	Oc 92	97	89		7	1	870,705			
23	Nebraska.....	10	7,209	5	39	1,313	139	5,713	Oc 5,977	Au 5,428	5,858	5,404	439	10	5	25,571,866			
24	Nevada.....	4	118		8	15	4	91	Je 94	Ja 87	91	91				788,712			
25	New Hampshire.....	5	26	8				18	(*) 18	(*) 18	18	18				20,246			
26	New Jersey.....	56	2,532	46	79	313	61	2,033	Ja 2,300	No 1,848	2,080	1,991	85	4		8,733,477			
27	New York.....	184	8,077	180	212	1,145	295	6,245	Ja 6,464	Se 6,113	6,219	6,028	185	6		44,962,008			
28	Ohio.....	152	4,321	168	179	418	86	3,480	De 4,156	Se 3,310	3,806	3,715	86	5		14,645,736			
29	Oregon.....	14	563	8	25	78	10	442	De 498	My 400	500	482	18			3,477,641			
30	Pennsylvania.....	146	4,605	143	161	590	95	2,616	No 3,719	Ap 3,516	3,744	3,647	83	12	2	10,251,971			
31	Rhode Island.....	10	231	18	6	17		190	De 194	Je 184	193	191				562,005			
32	Tennessee.....	18	255	25	12	15	4	199	No 278	Ap 172	305	282	23			567,628			
33	Texas.....	18	4,054	5	37	488	38	3,486	Mh 3,862	Au 2,940	3,718	3,416	293	9		14,405,135			
34	Utah.....	14	197	10	15	29	5	138	De 168	Ja 131	168	159	9			841,331			
35	Virginia.....	21	515	20	24	62	13	396	Ja 505	My 330	440	410	28	2		2,259,042			
36	Washington.....	11	1,039	6	31	96	42	864	Mh 912	No 829	842	810	32			6,923,655			
37	West Virginia.....	7	281	2	23	39	3	214	De 220	Se 210	218	211	7			1,374,157			
38	Wisconsin.....	22	2,376	21	35	257	52	2,011	De 2,736	Au 1,645	2,143	2,018	90	35		10,386,423			
39	All other states.....	27	2,284	26	66	209	37	1,946			2,158	2,055	98	5		9,600,261			

1 Owned power only.

2 Includes rented power, other than electric.

3 Same number reported throughout the year.

SLAUGHTERING AND MEAT PACKING.

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AND MEAT-PACKING INDUSTRY, BY STATES: 1914.

EXPENSES.								Value of products.	Value added by manu- facture.	POWER.					Electric horsepower generated in establishments reporting.	
Salaries and wages.				Rent and taxes.		For materials.				Primary horsepower.						
Officials.	Clerks, etc.	Wage earners.	For contract work.	Rent of factory.	Taxes, in- cluding internal revenue and cor- poration income.	Principal materials.	Fuel and rent of power.			Total.	Steam en- gines. ¹	Internal-combust- ion engines. ²	Water wheels and motors. ¹	Electric (rented).		
\$6,272,420	\$21,288,603	\$62,135,722	\$278,421	\$1,531,710	\$2,879,425	\$1,433,321,900	\$8,340,758	\$1,651,965,424	\$210,302,766	253,066	210,536	3,399	15	32,116	78,694	1
24,750	2,080	48,251	.....	.....	3,403	572,529	19,071	703,082	111,482	897	685	.....	.....	212	.....	2
.....	.....	8,032	1,250	150	145	110,920	37	122,738	11,781	.....	.....	.....	.....	.....	.....	3
344,370	785,256	1,769,861	3,403	44,989	87,550	40,714,973	215,609	49,499,958	8,569,376	7,018	3,813	58	.....	3,147	105	4
78,530	161,027	480,252	12,581	11,060	26,362	10,604,341	82,585	12,726,127	2,039,201	2,467	2,076	.....	.....	391	1,025	5
10,660	37,819	226,314	.....	1,196	11,728	3,901,502	21,111	4,450,959	528,346	333	333	.....	.....	.....	302	6
10,886	17,744	82,208	.....	2,889	3,710	1,470,417	28,607	1,710,741	211,717	504	425	.....	.....	79	.....	7
4,600	9,200	31,830	.....	2,745	1,000	783,518	5,181	925,386	136,687	144	100	.....	.....	44	.....	8
16,725	11,937	78,889	.....	4,800	2,835	704,788	9,708	981,115	266,619	227	26	.....	.....	201	.....	9
1,622,632	8,551,108	19,285,765	21,697	165,065	844,076	407,042,018	1,853,052	485,362,180	76,467,110	66,598	60,778	216	.....	5,604	25,807	10
209,969	355,333	2,496,674	5,590	14,336	92,684	46,014,336	247,775	51,021,537	4,759,426	9,844	8,486	32	.....	1,326	2,440	11
222,913	940,685	2,728,549	195	229,221	95,575	67,298,945	474,563	74,171,865	6,398,357	10,183	9,101	152	7	923	3,296	12
256,950	2,332,775	5,907,907	11,675	17,881	472,338	135,053,008	898,535	151,647,123	15,695,580	24,376	20,946	30	.....	3,400	10,789	13
30,645	20,420	103,586	.....	2,416	5,686	3,654,848	16,014	4,109,409	438,547	834	726	20	.....	88	150	14
9,199	10,320	94,519	350	75	8,844	34,147	22,558	189,177	132,472	1,057	1,057	.....	.....	131	15	15
6,524	5,902	72,495	.....	1,880	2,101	1,031,585	5,476	1,247,441	210,380	139	41	9	.....	89	.....	16
134,128	244,644	748,963	.....	40,215	28,585	13,619,908	147,061	16,607,367	2,840,398	3,878	3,030	50	.....	798	996	17
144,475	373,213	1,893,645	41,311	44,823	148,627	45,201,441	226,898	51,724,520	6,296,181	5,772	3,594	66	.....	2,112	110	18
103,166	157,739	769,514	.....	2,700	25,051	18,744,135	69,730	20,665,737	1,851,872	3,056	2,585	4	.....	467	820	19
88,226	430,640	1,798,973	2,358	7,360	72,157	41,885,268	206,227	47,535,803	5,944,308	5,189	4,322	16	.....	851	1,421	20
280,808	536,421	3,423,416	6,085	16,838	52,078	83,733,228	602,209	91,608,121	7,272,686	15,378	14,203	122	.....	1,053	5,983	21
22,260	30,000	100,956	.....	870	5,624	1,707,983	8,738	2,119,539	402,818	299	.....	8	.....	291	.....	22
152,840	1,691,910	3,697,374	1,040	169,690	120,397	93,505,746	666,842	104,530,333	10,330,745	15,486	12,538	.....	.....	2,948	3,647	23
16,719	22,616	98,076	.....	1,320	5,064	1,585,011	19,144	1,833,270	249,115	407	.....	.....	.....	407	.....	24
215,355	339,890	1,471,679	88,663	103,181	64,980	35,124,031	186,248	38,809,339	3,499,060	6,597	5,743	236	.....	618	1,281	25
783,003	1,621,192	4,610,250	41,013	340,025	241,310	126,704,702	577,031	144,236,162	16,954,429	16,189	10,916	817	1	4,455	3,446	27
369,046	455,250	1,381,400	8,057	45,721	122,072	57,998,310	298,660	64,960,396	6,663,426	12,356	9,139	618	.....	2,599	3,300	28
66,100	98,577	308,717	.....	7,750	9,828	6,142,410	60,045	7,486,920	1,284,465	1,344	187	6	7	1,144	.....	29
445,039	637,051	2,492,207	18,171	148,402	89,570	57,315,977	288,712	65,191,272	7,586,583	11,883	9,972	317	.....	1,594	3,344	30
26,312	25,310	105,201	.....	200	4,536	4,148,751	9,247	4,497,456	339,458	336	165	3	.....	168	.....	31
17,315	10,414	87,357	2,750	684	4,604	1,540,077	21,371	1,889,091	327,643	1,213	1,107	4	.....	102	.....	32
99,417	612,594	2,068,667	1,494	7,230	65,073	43,885,454	538,963	52,945,022	8,520,605	12,276	12,141	31	.....	104	5,466	33
27,481	36,524	114,717	4,212	2,159	4,832	2,656,782	15,184	3,010,678	338,712	349	52	10	.....	287	.....	34
46,670	70,557	212,476	1,300	1,598	12,374	3,678,526	46,948	4,362,272	636,798	3,084	2,846	37	.....	201	206	35
126,290	153,578	691,172	.....	5,040	51,078	15,822,465	78,309	18,443,526	2,542,752	2,149	445	5	.....	1,699	.....	36
33,438	30,612	139,554	.....	3,800	7,993	4,426,609	20,287	4,787,680	340,764	1,557	1,080	437	.....	40	182	37
100,545	238,874	1,227,444	1,500	24,699	64,558	28,388,714	148,853	32,180,684	3,643,117	3,759	3,430	20	.....	309	1,405	38
124,434	235,391	1,214,729	2,226	58,627	21,157	26,860,409	202,786	33,499,445	6,436,250	5,853	4,444	75	.....	1,334	2,523	39

¹ Same number reported for one or more other months.

² All other states embrace: Arizona, 1 establishment; Georgia, 4; Mississippi, 1; New Mexico, 1; North Carolina, 1; Oklahoma, 4; South Carolina, 2; South Dakota, 4; Vermont, 3; Wyoming, 1; and the District of Columbia, 5.

BUTTER, CHEESE, AND CONDENSED MILK.

By BENJAMIN L. McNULTY.

SUMMARY AND ANALYSIS.

Scope of the industry.—This report gives statistics for the manufacture of butter, cheese, and condensed milk as a combined industry, although in some tables the more important data are given for the three branches separately. The general statistics of capital, employees, salaries, wages, cost of materials, and value of products shown for each branch represent the complete returns for those establishments reporting the designated commodity as their product of chief value. The value of products shown for the butter-making branch of the industry, for example, includes the value of cheese or condensed milk manufactured as a subsidiary product in factories engaged primarily in the manufacture of butter. This report does not include data for considerable quantities of butter manufactured as a by-product of establishments engaged primarily in the sale of milk and cream, but partially condensed milk manufactured as a

by-product by such establishments and sold to condensed-milk establishments and remanufactured by them is of course included in the products of the latter.

Factories of considerable size are sometimes operated as adjuncts to farms, but such factories are considered a part of the farm equipment and are covered by the census of agriculture, which is taken only at decennial periods. The present report is, therefore, confined to establishments operating independently of farms. Skimming or separating stations operated in connection with a butter factory are counted as a part of the factory.

Table 1 distinguishes the three classes of factories, namely, those engaged primarily in the manufacture of butter, of cheese, and of condensed milk, and presents a summary of the statistics for the United States as a whole for 1914 and 1909.

Table 1	TOTAL FOR INDUSTRY.			ESTABLISHMENTS ENGAGED PRIMARILY IN THE MANUFACTURE OF—								
				Butter.			Cheese.			Condensed milk.		
	1914	1909	Per cent of increase, 1909-1914.	1914	1909	Per cent of increase, 1909-1914.	1914	1909	Per cent of increase, 1909-1914.	1914	1909	Per cent of increase, 1909-1914.
Number of establishments.....	7,628	8,479	-10.0	4,350	4,783	-8.9	3,082	3,560	-13.4	190	136	39.7
Persons engaged.....	34,795	31,506	10.4	21,516	19,380	11.0	5,654	7,164	-21.1	7,625	4,962	53.7
Proprietors and firm members.....	5,009	8,019	-37.5	2,543	3,855	-34.0	2,420	4,148	-41.7	46	16	.....
Salaried employees.....	6,727	5,056	33.0	4,824	3,962	21.8	326	312	4.5	1,577	782	102.7
Wage earners (average number).....	23,059	18,431	25.1	14,149	11,563	22.4	2,908	2,704	7.5	6,002	4,164	44.1
Primary horsepower.....	130,862	101,349	29.1	91,628	78,123	17.3	19,219	11,638	65.1	20,015	11,588	72.7
Capital.....	\$105,812,304	\$71,283,615	48.4	\$59,625,448	\$43,017,467	38.6	\$11,139,004	\$9,028,906	23.4	\$35,047,852	\$19,237,242	82.3
Salaries and wages.....	21,977,895	14,671,932	49.8	14,090,240	9,691,151	45.4	2,274,213	1,825,270	24.6	5,613,442	3,155,511	77.9
Salaries.....	6,130,814	3,590,624	70.7	3,970,762	2,449,898	62.1	208,529	155,408	34.2	1,951,523	985,319	98.1
Wages.....	15,847,081	11,081,308	43.0	10,119,478	7,241,253	39.7	2,065,684	1,669,862	23.7	3,661,919	2,170,193	68.7
Paid for contract work.....	712,651	301,658	136.2	652,076	284,828	129.3	26,917	16,667	61.5	33,658	663	4,976.6
Rent and taxes (including internal revenue).....	1,262,749	684,622	84.4	860,609	502,054	71.4	121,969	91,776	32.9	280,171	90,792	208.6
Cost of materials.....	315,025,635	235,546,064	33.7	212,546,847	169,646,441	25.3	46,758,685	39,021,766	19.8	55,720,103	26,877,867	107.3
Value of products.....	364,285,150	274,557,718	32.7	243,379,371	194,999,198	24.8	51,744,779	44,253,177	16.9	69,161,006	35,295,343	95.9
Value added by manufacture (value of products less cost of materials).....	49,259,515	39,011,654	26.3	30,832,524	25,352,757	21.6	4,986,094	5,241,411	-4.9	13,440,897	8,417,496	59.7

¹ A minus sign (—) denotes decrease; percentages are omitted where base is less than 100.

Of the total number of establishments reported for the industry for 1914, 57.1 per cent were engaged primarily in the manufacture of butter, 40.4 per cent in that of cheese, and 2.4 per cent in the manufacture of condensed milk. Except for the decreases in the number of establishments and in the number of proprietors and firm members engaged in the manufacture of butter and of cheese, and the value added by manufacture for those making cheese as their primary product, there were increases in all items for all three branches of the industry during the period 1909-1914.

Although each census since that of 1899 shows a decrease in the number of establishments engaged in the manufacture of butter and cheese, there has been a constant increase in the quantities manufactured. The industry has developed more rapidly in the Central and Western than in the Eastern states. Prior to the census of 1909, New York outranked all other states in the annual output of these products, but at that census, as well as for 1914, the greatest value was reported for Wisconsin and the center of the industry shifted from the Eastern to the North Central states.

The manufacture of condensed milk has developed rapidly during the past decade and is becoming well distributed, factories having been reported in 24 states at the census of 1914. While the largest percentages of increase are shown for the manufacture of condensed milk, the production of butter is by far the most important branch of the industry and shows the largest actual increases. The decrease in the number of establishments in this branch is due mainly, of course, to the abandonment of some of the smaller plants and the consolidation of others. In some cases, however, where two or more factories operated under the same ownership are located in the same state, one census report was made to cover the operations of all, and they were counted as one establishment; and the extent to which these consolidated reports were made at the different censuses necessarily has had some effect on the number of establishments shown. This condition should also be considered in comparing the number of establishments shown in the census reports with the numbers given in state and private reports.

The decrease in the number of proprietors and firm members in the manufacture of cheese is due in part to the decrease in the number of establishments and in part to changes in the form of ownership. Some establishments operated by individuals or firms in 1909 were incorporated during the period between the last two censuses, and it is possible that the same individuals who were reported as proprietors and firm members at the earlier census were returned as salaried officials at the later one.

For 1914, 342 establishments engaged primarily in the manufacture of commodities other than butter, cheese, and condensed milk reported these or kindred commodities as subsidiary products. These establishments are included among those covered by Table 2, which gives the distribution of all establishments according to the kind of products made.

Of the total number of establishments, 4,150, or 52.1 per cent, reported the manufacture of butter only;

2,843, or 35.7 per cent, the manufacture of cheese only; and 130, or 1.6 per cent, the manufacture of condensed milk only. (That is to say, these establishments reported no other products of this industry than those specified. Some of them, however, were engaged primarily in other industries and reported butter, cheese, or condensed milk as a subsidiary product.) Each of the remaining 847 establishments using materials from the dairy enterprises of the country reported the manufacture of casein, powdered milk, sugar of milk, or of two or more products included within the scope of the industry.

Table 2

PRODUCT.	Num-ber of estab-lish-ments.
Total.....	17,870
Butter only.....	4,150
Cheese only.....	2,843
Condensed milk only.....	130
Casein only.....	17
Powdered milk only.....	2
Butter and cheese.....	570
Butter and condensed milk.....	64
Butter and casein.....	72
Butter and powdered milk.....	7
Butter and sugar of milk.....	1
Butter, cheese, and condensed milk.....	20
Butter, cheese, and casein.....	24
Butter, cheese, and powdered milk.....	2
Butter, cheese, and sugar of milk.....	2
Butter, cheese, condensed milk, and casein.....	4
Butter, cheese, casein, and sugar of milk.....	1
Butter, condensed milk, and casein.....	3
Butter, condensed milk, and powdered milk.....	7
Butter, casein, and powdered milk.....	2
Butter, casein, powdered milk, and sugar of milk.....	1
Cheese and condensed milk.....	24
Cheese and casein.....	1
Cheese and sugar of milk.....	1
Condensed milk and casein.....	3
Condensed milk and powdered milk.....	3
Condensed milk and sugar of milk.....	1
Condensed milk, casein, and sugar of milk.....	1
Casein and powdered milk.....	1
Casein and sugar of milk.....	3

¹ Includes 342 establishments engaged primarily in other industries.

Comparison with earlier censuses.—Comparative figures for the industry as a whole are not available for any census prior to 1879. Table 3 summarizes the statistics of establishments engaged in the manufacture of butter, cheese, and condensed milk for each census from 1879 to 1914, inclusive, and gives percentages of increase.

Table 3

	NUMBER OR AMOUNT.						PER CENT OF INCREASE. ¹				
	1914	1909	1904	1899	1889	1879	1909-1914	1904-1914	1899-1909	1889-1899	1879-1889
Number of establishments.....	7,628	8,479	8,926	9,242	4,552	3,932	-10.0	-14.5	-8.3	103.0	15.8
Persons engaged.....	34,795	31,506	25,865	22,604	(2)	(2)	10.4	43.3	39.4	.....	.....
Proprietors and firm members..	5,009	8,019	6,801	6,987	(2)	(2)	-37.5	7.1	14.8	.....	.....
Salaried employees.....	6,727	5,056	3,507	2,818	(2)	(2)	33.0	91.8	79.4	.....	.....
Wage earners (average number)	23,059	18,431	15,557	12,799	12,219	7,903	25.1	43.2	44.0	4.7	54.6
Primary horsepower.....	130,862	101,349	93,845	88,062	25,526	(2)	29.1	39.4	15.1	245.0	.....
Capital.....	\$105,812,304	\$71,283,615	\$47,255,556	\$36,303,164	\$16,016,573	\$9,604,803	48.4	123.9	96.4	126.7	66.8
Salaries and wages.....	21,977,895	14,671,932	9,789,034	7,057,273	5,116,005	1,546,495	49.8	124.5	107.9	37.9	230.8
Salaries.....	6,130,814	3,590,624	1,376,097	911,712	(2)	(2)	70.7	345.5	293.8	80.3	.....
Wages.....	15,847,081	11,081,308	8,412,937	6,145,561	(2)	(2)	43.0	88.4	.....	.....	.....
Paid for contract work.....	712,651	301,658	39,024	28,604	(2)	(2)	136.2	1,726.2	954.6	.....	.....
Rent and taxes (including internal revenue).....	1,262,749	684,622	* 463,423	* 356,271	(2)	(2)	84.4	.....	.....	.....	.....
Cost of materials.....	315,025,635	235,546,064	142,920,277	108,841,200	49,819,301	18,363,579	33.7	120.4	116.4	118.5	171.3
Value of products.....	364,285,150	274,557,718	168,182,789	130,783,349	60,635,705	25,742,510	32.7	116.6	109.9	115.7	135.5
Value added by manufacture (value of products less cost of materials).	49,259,515	39,011,654	25,262,512	21,942,149	10,816,404	7,378,931	26.3	95.0	77.8	102.9	46.6

¹ A minus sign (-) denotes decrease.

² Figures not available.

³ Exclusive of internal revenue.

The manufacture of cheese in 1849 was reported by 8 factories, all of which were located in Ohio, with products valued at \$67,210; but for 1859 the census canvass showed only 2 factories, both in Connecticut, with products valued at \$13,400. In 1869, however, the number of factories had increased to 1,313 and the value of their products to \$16,771,665. It was not until the census of 1879 that the manufacture of butter as a factory industry was reported. One establishment engaged in the manufacture of condensed milk, with products valued at \$48,000, was reported for 1859, but no statistics for the production of this commodity appear in the reports for 1869. At the census of 1879, however, the manufacture of condensed milk to the value of \$1,547,588 was reported. The value of products reported at this census for butter factories was \$3,868,235; for cheese factories, \$13,991,221; and for factories making both butter and part-cream or skimmed-milk cheese, \$6,335,466, of which about \$3,000,000 represented butter.

The value of products reported for the industry as a whole was nearly fifteen times as great in 1914 as in 1879. A part of this increase, however, is due to the increases in the prices of dairy products. The relative increase in the cost of materials was greater during every period covered by the table than that in the value of products. In 1879 the cost of materials was equal to 71.3 per cent of the value of products, whereas in 1914 the corresponding percentage was 86.5.

Summary, by states.—The industry is well distributed throughout the country, one or more establishments being reported in every state, except Florida, at the census of 1914. Table 4 summarizes the more important statistics for the industry, by states, the states being arranged according to the value of products reported for 1914. The diagram on the following page shows graphically the values of products reported for the leading states for 1914 and 1909.

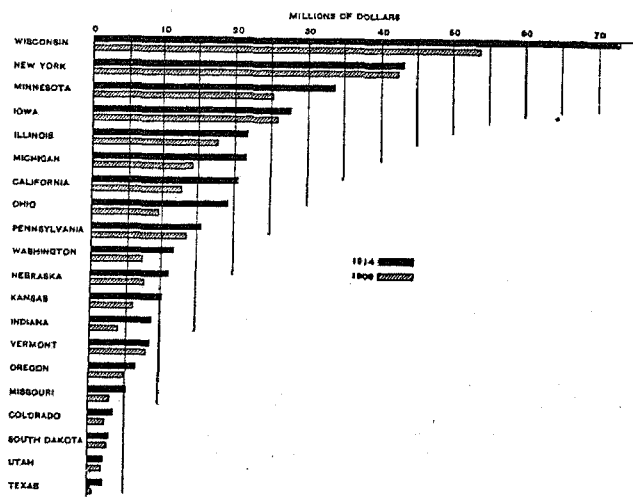
The quantities of the several products in the industry, by states, will be found in Table 19.

Table 4	CENSUS OF 1914.												PER CENT OF INCREASE. ¹											
STATE.	Number of establishments.	Wage earners.			Value of products.			Value added by manufacture.			Wage earners (average number).			Value of products.			Value added by manufacture.							
		Average number.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904					
																				1914	1909	1914	1909	1914	1909	1914	1909
United States.....	7,628	23,059	100.0	.....	\$364,285,150	100.0	.....	\$49,259,515	100.0	.....	25.1	18.5	21.5	32.7	63.2	28.6	26.3	54.4	15.1		
Wisconsin.....	2,431	3,717	16.1	1	72,858,592	20.0	1	7,533,054	15.3	1	29.8	24.6	29.1	35.3	79.5	49.1	29.0	62.6	2.7					
New York.....	1,144	3,235	14.0	2	43,262,309	11.9	2	6,283,011	12.8	2	12.9	-0.1	17.6	1.9	36.7	16.9	-0.2	48.0	4.5					
Minnesota.....	807	1,458	6.3	5	33,746,396	9.3	3	2,977,283	6.0	7	23.1	13.7	40.7	33.5	96.5	51.8	15.4	49.0	34.1					
Iowa.....	490	1,333	5.8	7	27,605,968	7.6	4	3,530,486	7.2	4	8.3	.....	.....	6.8	.....	.....	17.4	.....	.....			
Illinois.....	287	1,755	7.6	3	21,792,220	6.0	5	3,556,588	7.2	3	1.3	-0.2	17.0	22.4	34.1	3.1	0.7	37.5	-4.2					
Michigan.....	364	1,367	5.9	6	21,549,597	5.9	6	3,087,094	6.3	6	27.4	22.6	74.0	50.8	74.0	109.5	61.6	61.6	83.3					
California.....	201	1,044	4.5	9	20,466,428	5.6	7	2,492,007	5.1	9	74.9	-1.0	50.0	60.4	63.2	118.3	53.7	19.1	126.1					
Ohio.....	286	1,480	6.4	4	19,325,977	5.3	8	3,357,766	6.8	5	38.7	118.6	25.4	99.4	111.0	20.6	67.5	132.1	14.6					
Pennsylvania.....	387	1,309	5.7	8	15,687,299	4.3	9	2,670,417	5.4	8	11.2	-3.4	24.8	15.8	17.0	12.5	42.8	-2.9	22.0					
Washington.....	101	860	3.7	10	11,807,897	3.2	10	2,296,189	4.7	10	17.0	96.5	156.2	62.4	142.9	151.5	44.0	165.4	132.9					
Nebraska.....	48	696	3.0	13	11,082,123	3.0	11	1,291,137	2.6	13	81.7	51.4	-24.0	44.3	130.9	47.6	3.6	90.5	63.5					
Kansas.....	61	761	3.3	11	10,219,813	2.8	12	1,509,338	3.1	11	118.7	-15.9	4.8	68.3	53.9	8.0	34.7	62.3	16.8					
Indiana.....	120	719	3.1	12	8,824,242	2.4	13	1,393,046	2.8	12	47.3	.....	.....	122.9	.....	.....	82.7	.....	.....			
Vermont.....	173	471	2.0	14	8,695,915	2.4	14	719,625	1.5	18	-9.2	.....	.....	7.2	.....	.....	-31.9	.....	.....			
Oregon.....	118	434	1.9	15	6,587,949	1.8	15	1,065,647	2.2	14	3.3	.....	.....	33.5	.....	.....	10.0	.....	.....			
Missouri.....	54	361	1.6	16	5,167,343	1.4	16	800,031	1.6	15	127.0	7.4	.....	74.6	125.2	204.2	74.0	63.7	172.8				
Colorado.....	61	291	1.3	17	3,596,565	1.0	17	684,901	1.4	17	38.6	.....	.....	53.7	.....	.....	64.6	.....	.....			
South Dakota.....	62	134	0.6	20	2,920,342	0.8	18	342,983	0.7	20	-3.6	-27.6	29.7	8.7	23.0	82.1	-9.1	8.0	80.4					
Utah.....	37	264	1.1	18	2,298,153	0.6	19	407,084	0.8	19	23.4	.....	.....	16.6	.....	.....	13.7	.....	.....			
Texas.....	51	174	0.8	19	2,280,779	0.6	20	528,779	1.1	18	.....	.....	.....	245.6	.....	.....	304.5	.....	.....			
North Dakota.....	58	115	0.5	22	1,739,692	0.5	21	275,215	0.6	22	.....	.....	.....	69.0	.....	.....	99.7	.....	.....			
Maine.....	17	90	0.4	23	1,426,448	0.4	22	187,135	0.4	24	.....	.....	.....	9.6	.....	.....	7.8	.....	.....			
Idaho.....	28	88	0.4	25	1,395,719	0.4	23	231,214	0.5	23	.....	.....	.....	57.9	414.0	48.3	13.6	.....	.....			
Montana.....	32	71	0.3	27	1,217,683	0.3	24	206,661	0.4	25	.....	.....	.....	190.7	.....	.....	.....	.....	.....
Arizona.....	7	86	0.4	26	1,071,756	0.3	25	295,864	0.6	21	.....	.....	.....	99.1	101.5	80.4	.....	.....	.....		
New Jersey.....	14	67	0.3	28	854,307	0.2	26	123,924	0.2	30	.....	.....	.....	7.7	.....	.....	0.2	.....	.....			
Massachusetts.....	17	33	0.1	35	813,783	0.2	27	116,318	0.2	32	.....	.....	.....	22.5	-24.3	-26.8	0.4	.....	-43.4	
Oklahoma.....	14	46	0.2	31	808,978	0.2	28	135,681	0.3	28	.....	.....	.....	29.6	.....	.....	-38.7	.....	.....			
Wyoming.....	14	42	0.2	34	543,499	0.1	29	143,524	0.3	26	.....	.....	.....	102.1	.....	.....	.....	.....	.....
New Hampshire.....	23	44	0.2	33	656,681	0.2	30	110,005	0.2	33	.....	.....	.....	-18.6	.....	.....	.....	.....	.....
Connecticut.....	24	63	0.3	29	624,288	0.2	31	97,137	0.2	34	.....	.....	.....	-40.0	-42.8	-25.5	-20.6	-15.9	-31.6		
Virginia.....	13	90	0.4	24	607,640	0.2	32	131,749	0.3	29	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maryland.....	32	61	0.3	30	583,310	0.2	33	120,150	0.2	31	.....	.....	.....	-29.2	-10.8	26.0	-25.2	-7.4	8.3		
Nevada.....	11	21	0.1	36	446,870	0.1	34	73,727	0.1	36	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kentucky.....	10	122	0.5	21	287,306	0.1	35	171,058	0.3	27	.....	.....	.....	.....	.....	.....	4.4	.....	.....			
Delaware.....	10	45	0.2	32	242,096	0.1	36	59,168	0.1	37	.....	.....	.....	.....	.....	.....	-3.3	.....	.....			
All other states.....	41	112	0.4	.....	1,209,187	0.3	.....	254,521	0.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

¹ Percentages are based on figures in Table 23; a minus sign (—) denotes decrease. Percentages are omitted where base is less than 100 for wage earners or less than \$100,000 for value of products or value added by manufacture, or where comparable figures can not be given.

For certain of the states which make up the group "all other states" the value of products was greater than for some states shown in the above table; but, in order to avoid disclosing the operations of individual establishments, figures can not be given for these states separately.

BUTTER, CHEESE, AND CONDENSED MILK—VALUE OF PRODUCTS, FOR LEADING STATES: 1914 AND 1909.



In 1914 Wisconsin, the most important state with reference to this industry, reported nearly one-third of the total number of establishments, one-sixth of the wage earners, one-fifth of the value of products, and over one-seventh of the value added by manufacture. In quantity of butter manufactured, Wisconsin has ranked first since and including the year 1904. In cheese production it attained the lead in 1909; and in 1914 its output of this commodity amounted to 55.6 per cent of the total for the United States. At the last census the state ranked second in the total quantity of condensed and evaporated milk manufactured, being outranked in this respect by Illinois. Although Table 4 shows larger percentages of increase in value of products for a number of states than for Wisconsin, this state shows the largest actual increases in both quantity and value of products.

In New York, the second state in importance in the industry as a whole, decreases in both quantity and value of butter and cheese produced are shown for the period 1909-1914. The increase in the production of condensed and evaporated milk, while less in quantity than the combined decreases in butter and cheese, was sufficient, because of the increases in prices that occurred during this period, to bring about an increase of 1.9 per cent in the value of products for the industry as a whole in the state. Had the average prices of the several products remained unchanged between 1909 and 1914, the total value of products would have shown a decrease instead of an increase for the five years.

Minnesota, the third state in importance in the industry as a whole, ranked second in 1914 in output of

butter, having contributed 14.4 per cent of the entire amount of this product reported for the industry in that year. In the manufacture of both cheese and condensed and evaporated milk Minnesota's rank is low.

Iowa, the fourth state in the industry as a whole in respect to value of products, ranked third in the production of butter in 1914.

Illinois, fifth in the combined industry, was first in the amount of condensed and evaporated milk reported for 1914. In the manufacture of butter and cheese this state ranked tenth and sixth, respectively, in that year.

In many of the Eastern states the percentages of increase in the value of products for the industry as a whole from 1909 to 1914 were comparatively small, and for New Hampshire, Connecticut, Maryland, and Delaware actual decreases are shown; but in most of the Central, Western, and Southern states considerable increases are shown for this period.

Persons engaged in the industry.—Table 5 shows, for 1914 and 1909, for the butter, cheese, and condensed-milk industry as a whole and for each of its branches, the number of persons engaged, classified according to occupational status and sex, and in the case of wage earners, according to age periods also.

Table 6 presents percentages of increase and per cent distribution based on the figures in Table 5 for the industry as a whole.

The number of persons engaged in the industry as a whole increased by 3,289, or 10.4 per cent, between 1909 and 1914. For the butter-manufacturing branch of the industry the increase was 2,136, or 11 per cent; and for the condensed-milk branch it was 2,663, or 53.7 per cent; but the number of persons engaged in the manufacture of cheese shows a decrease of 1,510, or 21.1 per cent.

For the industry as a whole, decreases are shown for proprietors and firm members and for salaried officers of corporations. These decreases reduced the relative importance of the group "proprietors and officials," which represented 33.3 per cent of the total number of persons engaged in 1909, as against only 21.3 per cent in 1914. On the other hand, the proportion which wage earners represented of the total increased from 58.5 per cent in 1909 to 66.3 per cent in 1914.

Males constituted more than nine-tenths of the total number of persons engaged in the combined industry in both 1909 and 1914, but the proportion was somewhat smaller for the later than for the earlier year. The proportion which female clerks and other subordinate salaried employees represented of the total number of females engaged in the industry increased from 35.1 per cent in 1909 to 39.7 per cent in 1914. On the other hand, the percentage which the female wage earners represented of the total number of females decreased during the same period from 58.9 to 56.5.

Although, taking the industry as a whole, female wage earners in 1914 were more numerous than female clerks and other subordinate salaried employees, the the largest number of females reported for either class in any one of the three branches of the industry, 1,116, appears for clerks and other subordinate salaried em-

ployees in the butter-making branch. In the industry as a whole and in each of its branches decreases took place between 1909 and 1914 in the number of children under 16 years of age employed as wage earners, only 87 persons of this class being reported for the later year.

Table 5

INDUSTRY AND CLASS OF PERSONS ENGAGED.	Cen-sus year.	PERSONS ENGAGED IN THE INDUSTRY.						INDUSTRY AND CLASS OF PERSONS ENGAGED.	Cen-sus year.	PERSONS ENGAGED IN THE INDUSTRY.					
		Total.	Male.	Fe-male.	Per cent of total.		Total.			Male.	Fe-male.	Per cent of total.			
					Male.	Fe-male.						Male.	Fe-male.		
BUTTER, CHEESE, AND CON- DENSED MILK.	1914	34,795	31,493	3,302	90.5	9.5	CHEESE.....	1914	5,654	5,510	144	97.5	2.5		
	1909	31,506	29,095	2,411	92.3	7.6		1909	7,164	7,018	146	98.0	2.0		
Proprietors and officials.....	1914	7,420	7,293	127	98.3	1.7	Proprietors and officials.....	1914	2,607	2,540	67	98.2	1.8		
	1909	10,480	10,336	144	98.6	1.4		1909	4,299	4,238	61	98.6	1.4		
Proprietors and firm members..	1914	5,009	4,906	103	97.9	2.1	Proprietors and firm members..	1914	2,429	2,375	54	98.1	1.9		
	1909	8,019	7,901	118	98.5	1.5		1909	4,148	4,089	59	98.6	1.4		
Salaried officers of corporations..	1914	635	614	21	96.7	3.3	Salaried officers of corporations..	1914	37	35	2	94.6	5.4		
	1909	1,032	1,014	18	98.3	1.7		1909	64	62	2	96.9	3.1		
Superintendents and managers..	1914	1,776	1,773	3	99.8	0.2	Superintendents and managers..	1914	150	150	0	100.0	0.0		
	1909	1,429	1,421	8	99.4	0.6		1909	87	87	0	100.0	0.0		
Clerks and other subordinate sala- ried employees.	1914	4,316	3,006	1,310	69.6	30.4	Clerks and other subordinate sala- ried employees.	1914	139	111	28	79.9	20.1		
	1909	2,595	1,748	847	67.4	32.6		1909	161	135	26	83.8	16.1		
Wage earners (average number)....	1914	23,059	21,194	1,865	91.9	8.1	Wage earners (average number)....	1914	2,908	2,839	69	97.6	2.4		
	1909	18,431	17,011	1,420	92.3	7.7		1909	2,704	2,645	59	97.8	2.2		
16 years of age and over.....	1914	22,972	21,122	1,850	91.9	8.1	16 years of age and over.....	1914	2,594	2,525	69	97.6	2.4		
	1909	18,324	16,924	1,400	92.4	7.6		1909	2,686	2,627	59	97.8	2.2		
Under 16 years of age.....	1914	87	72	15	82.8	17.2	Under 16 years of age.....	1914	14	14	0	100.0	0.0		
	1909	107	87	20	81.3	18.7		1909	18	18	0	100.0	0.0		
BUTTER.....	1914	21,516	19,359	2,157	90.0	10.0	CONDENSED MILK.....	1914	7,625	6,624	1,001	86.9	13.1		
	1909	19,380	18,244	1,136	94.2	5.9		1909	4,962	3,833	1,129	77.3	22.8		
Proprietors and officials.....	1914	4,415	4,337	78	98.2	1.8	Proprietors and officials.....	1914	398	396	2	99.5	0.5		
	1909	5,966	5,883	83	98.6	1.4		1909	215	213	2	100.0	0.0		
Proprietors and firm members..	1914	2,543	2,486	57	97.8	2.2	Proprietors and firm members..	1914	46	45	1	97.8	2.2		
	1909	3,855	3,796	59	98.5	1.5		1909	16	16	0	100.0	0.0		
Salaried officers of corporations..	1914	496	478	18	96.4	3.6	Salaried officers of corporations..	1914	102	101	1	99.0	1.0		
	1909	905	889	16	98.2	1.8		1909	63	63	0	100.0	0.0		
Superintendents and managers..	1914	1,376	1,373	3	99.8	0.2	Superintendents and managers..	1914	250	250	0	100.0	0.0		
	1909	1,206	1,198	8	99.3	0.7		1909	136	136	0	100.0	0.0		
Clerks and other subordinate sala- ried employees.	1914	2,952	1,836	1,116	62.2	37.8	Clerks and other subordinate sala- ried employees.	1914	1,225	1,059	166	86.4	13.6		
	1909	1,851	1,172	679	63.3	36.7		1909	583	441	142	75.6	24.4		
Wage earners (average number)....	1914	14,149	13,186	963	93.2	6.8	Wage earners (average number)....	1914	6,002	5,169	833	86.1	13.9		
	1909	11,563	11,189	374	96.8	3.2		1909	4,164	3,177	987	76.3	23.7		
16 years of age and over.....	1914	14,113	13,183	930	93.2	6.8	16 years of age and over.....	1914	5,965	5,144	821	86.2	13.8		
	1909	11,523	11,154	369	96.8	3.2		1909	4,115	3,143	972	76.4	23.6		
Under 16 years of age.....	1914	86	33	53	91.7	8.3	Under 16 years of age.....	1914	37	25	12	67.6	32.4		
	1909	40	35	5	87.5	12.5		1909	49	34	15	69.4	30.6		

Table 6

Table 6	CLASS.	PERSONS ENGAGED IN THE INDUSTRY.								
		Per cent of increase, ¹ 1909-1914.			Per cent distribution.					
					Total.		Male.		Female.	
		Total.	Male.	Female.	1914	1909	1914	1909	1914	1909
All classes.....		10.4	8.2	27.0	100.0	100.0	100.0	100.0	100.0	100.0
Proprietors and officials.....		-29.2	-29.4	-11.8	21.3	33.3	23.1	35.5	3.9	6.0
Proprietors and firm members.....		-37.5	-37.9	-12.7	14.4	25.5	15.6	27.2	3.1	4.9
Salaried officers of corporations.....		-38.5	-39.4		1.8	3.3	1.9	3.5	0.6	0.7
Superintendents and managers.....		24.3	24.8		5.1	4.5	5.6	4.9	0.1	0.3
Clerks and other subordinate salaried employees.....		66.3	72.0	54.7	12.4	8.2	9.5	6.0	39.7	35.1
Wage earners (average number).....		25.1	24.6	31.3	66.3	58.5	67.3	58.5	56.5	58.9
16 years of age and over.....		25.4	24.8	32.1	66.0	58.2	67.1	58.2	56.0	58.1
Under 16 years of age.....		-18.7			0.3	0.3	0.2	0.3	0.5	0.8

¹ A minus sign (-) denotes decrease. Percentages are omitted where base is less than 100.

The average number of wage earners employed and their per cent distribution as males 16 years of age and over, females 16 years of age and over, and children under 16 years of age are given in Table 7 for 1914,

1909, and 1904, and for 1914 and 1909 for each of the 13 states in which 500 or more wage earners were employed in 1914.

Table 7

STATE.	Census year.	WAGE EARNERS.			
		Average number.	Per cent of total.		Under 16 years of age.
			16 years of age and over.	Male.	Female.
United States.....	1914	23,059	91.8	7.8	0.4
	1909	18,431	91.8	7.6	0.6
	1904	13,557	90.2	9.0	0.8
California.....	1914	1,044	91.9	4.9	0.2
	1909	597	93.8	6.2	.....
Illinois.....	1914	1,755	87.2	12.1	0.6
	1909	1,732	79.3	19.3	0.9
Indiana.....	1914	719	92.1	7.8	0.1
	1909	488	94.1	5.8	0.1
Iowa.....	1914	1,333	87.2	12.5	0.3
	1909	1,231	96.0	3.7	0.3
Kansas.....	1914	761	82.4	17.5	0.1
	1909	348	87.4	12.4	0.2
Michigan.....	1914	1,367	91.2	8.5	0.4
	1909	1,073	90.7	9.1	0.2
Minnesota.....	1914	1,458	97.7	2.0	0.3
	1909	1,184	99.0	0.7	0.3
Nebraska.....	1914	696	76.6	23.4	.....
	1909	383	88.8	10.7	0.5
New York.....	1914	3,235	94.2	5.7	0.1
	1909	2,866	90.7	8.7	0.6
Ohio.....	1914	1,480	94.3	5.5	0.2
	1909	1,067	89.7	9.0	1.3
Pennsylvania.....	1914	1,309	91.8	7.8	0.5
	1909	1,177	93.5	5.8	0.7
Washington.....	1914	860	91.0	7.0	2.1
	1909	735	84.3	14.9	0.8
Wisconsin.....	1914	3,717	94.6	4.9	0.5
	1909	2,863	97.1	2.2	0.7

Wage earners employed, by months.—The following table gives the total number of wage earners employed on the 15th of each month, or the nearest representative day, for 1914 and 1909, and the average number employed during each month in 1904, together with the percentage which the number reported for each

month forms of the greatest number reported for any month.

Table 8

MONTH.	WAGE EARNERS IN THE INDUSTRY.					
	Number. ¹			Per cent of maximum.		
	1914	1909	1904	1914	1909	1904
January.....	19,707	15,121	12,089	74.2	70.7	64.4
February.....	19,882	15,239	12,291	74.6	71.2	65.5
March.....	20,401	15,678	13,092	76.8	74.7	69.8
April.....	22,316	18,059	15,258	85.9	84.4	81.3
May.....	25,129	20,262	17,625	94.7	94.7	93.9
June.....	26,548	21,313	18,064	100.0	99.6	99.4
July.....	26,299	21,392	18,768	99.1	100.0	100.0
August.....	25,242	20,934	18,353	95.1	97.9	97.8
September.....	24,344	20,065	17,342	91.7	93.8	92.4
October.....	23,241	18,902	16,281	87.5	88.4	86.7
November.....	22,047	17,671	14,250	83.0	82.1	76.0
December.....	21,052	16,343	12,665	79.3	76.4	67.5

¹ The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

Since the production of milk reaches its maximum in the summer and its minimum in midwinter, the maximum and minimum employment of wage earners in the industry naturally occur at these seasons, respectively. In the years 1904 and 1909 the greatest number of wage earners were employed in July, and in 1914, in June; and for each of the three years the smallest number was reported for January. The figures for the industry indicate a greater degree of stability of employment during 1914 than at prior censuses. The proportion which the minimum number formed of the maximum in 1914 was nearly three-fourths, while in 1904 it was less than two-thirds.

Table 9 gives the total average number of wage earners employed during 1914, together with the total number employed on the 15th of each month, or the nearest representative day, for each state in which the average number of wage earners was 500 or more in 1914.

Table 9

Table 9	STATE.	WAGE EARNERS: 1914. [Month of maximum employment for each state is indicated by boldface figures and that of minimum by <i>italic</i> figures.]													Per cent min- imum is of max- imum.
		Average num- ber em- ployed during year.	Number employed on 15th day of the month or nearest representative day.												
			Jan- uary.	Feb- ruary.	March.	April.	May.	June.	July.	Aug- ust.	Sep- tem- ber.	Octo- ber.	Novem- ber.	Decem- ber.	
United States.....	23,059	19,707	19,882	20,401	22,816	25,129	26,548	26,299	25,242	24,344	23,241	22,047	21,052	74.2	
California.....	1,044	<i>999</i>	982	1,020	1,077	1,095	1,097	1,103	1,092	1,056	1,025	1,013	999	87.9	
Illinois.....	1,755	<i>1,594</i>	1,751	1,728	1,746	1,829	1,909	1,900	1,835	1,768	1,719	1,652	1,629	83.5	
Indiana.....	719	<i>647</i>	654	654	686	741	786	794	808	772	738	686	662	80.1	
Iowa.....	1,333	1,224	1,181	<i>1,175</i>	1,271	1,405	1,489	1,440	1,391	1,327	1,332	1,359	1,411	79.4	
Kansas.....	761	724	683	<i>673</i>	683	817	846	757	782	741	817	870	739	77.4	
Michigan.....	1,367	1,234	<i>1,221</i>	1,228	1,349	1,438	1,486	1,546	1,432	1,428	1,369	1,330	1,343	79.0	
Minnesota.....	1,458	1,325	<i>1,319</i>	1,346	1,440	1,515	1,597	1,597	1,582	1,520	1,443	1,411	1,401	82.6	
Nebraska.....	696	544	<i>539</i>	550	650	791	1,004	936	831	718	643	571	575	53.7	
New York.....	3,235	2,547	2,623	2,790	3,422	3,738	3,821	<i>1,939</i>	3,531	3,535	3,286	2,903	2,585	49.5	
Ohio.....	1,480	1,800	1,308	1,334	1,423	1,570	1,694	1,685	1,634	1,583	1,505	1,382	1,342	76.7	
Pennsylvania.....	1,309	1,175	<i>1,165</i>	1,194	1,304	1,421	1,435	1,436	1,412	1,361	1,300	1,288	1,217	81.1	
Washington.....	860	<i>714</i>	728	773	891	999	1,004	982	945	897	832	792	763	71.1	
Wisconsin.....	3,717	2,830	2,862	2,979	3,581	4,156	4,451	4,402	4,282	4,143	3,907	3,663	3,348	63.6	

In 8 of the 13 states shown in the table, June was the maximum month of employment; in 3, July; and in Indiana the maximum appears for August and in Kansas, for November. California shows the least variation in the employment of wage earners, and Nebraska the greatest. The maximum employment in any state, 4,451, was reported for Wisconsin, for June; and the minimum, 539, appears for Nebraska, for February.

Prevailing hours of labor.—In table 10 the average number of wage earners reported for the butter, cheese, and condensed-milk industry for 1914 and 1909 has been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. The number employed in each establishment is classified as a total, even though a few employees worked a greater or a smaller number of hours.

Table 10

STATE.	Census year.	AVERAGE NUMBER OF WAGE EARNERS.								
		Total.	In establishments where the prevailing hours of labor per week were—							
			48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72.	Over 72.
United States.....	1914	23,059	1,600	338	2,527	1,615	9,934	6,328	230	487
	1909	18,431	1,793	228	1,020	1,254	6,379	6,825	313	619
California.....	1914	1,044	101	15	239	76	99	495	4	15
	1909	597	58	11	56	85	120	244	5	18
Illinois.....	1914	1,755	64	2	79	87	1,196	308	8	11
	1909	1,732	131	9	59	40	495	992	2	4
Indiana.....	1914	719	29	.....	50	60	386	190	4	.....
	1909	488	44	1	6	19	323	81	2	12
Iowa.....	1914	1,333	160	38	132	16	782	168	26	11
	1909	1,231	173	12	123	60	597	179	43	44
Kansas.....	1914	761	25	.....	176	22	150	380	7	1
	1909	348	15	.....	5	1	82	217	22	6
Michigan.....	1914	1,367	145	24	81	43	833	232	8	1
	1909	1,073	145	13	27	44	750	68	25	1
Minnesota.....	1914	1,453	235	20	309	10	809	54	16	5
	1909	1,184	245	4	114	40	602	43	42	4
Nebraska.....	1914	696	1	.....	80	11	426	177	1	.....
	1909	383	5	.....	13	.....	274	87	4	.....
New York.....	1914	3,235	190	60	262	376	1,433	897	3	14
	1909	2,866	169	63	98	398	608	1,436	2	92
Ohio.....	1914	1,480	65	13	183	233	586	350	12	38
	1909	1,067	64	9	27	58	401	470	11	27
Pennsylvania.....	1914	1,309	153	38	123	132	472	194	39	158
	1909	1,177	131	49	75	156	337	411	13	5
Washington.....	1914	880	31	.....	55	23	271	478	2	.....
	1909	735	31	.....	87	16	181	415	3	2
Wisconsin.....	1914	3,717	208	73	243	251	1,350	1,391	91	180
	1909	2,863	251	22	68	192	766	1,103	94	367

The totals for the industry indicate a shortening of the hours of labor. In 1914, 73.6 per cent of the wage earners were employed in establishments in which the prevailing hours of labor were 60 or more per week as compared with 76.7 per cent in 1909. Only 3.1 per cent of the total number of wage earners in 1914, as against 5.1 per cent in 1909, were employed in establishments where the prevailing hours were 72 or over.

Of the eight groups of establishments for which figures are given in the table, that in which the prevailing hours were 60 per week employed the largest number of wage earners in 1914, not only in the United States as a whole but in each of the states for which separate figures are given, with the exceptions of California, Kansas, Washington, and Wisconsin; and the group comprising establishments whose prevailing hours were more than 60 but under 72 per week was next in importance. In 1909 the latter of these two

groups was first, and the former was second, in importance in respect of wage earners employed.

Character of ownership.—Table 11 presents statistics concerning the character of ownership, or legal organization, of establishments in the industry, for the United States for 1914 and 1909, and for such states as reported an average of 500 wage earners or more for 1914.

Of the total number of establishments in the United States in 1914, 37 per cent were operated by individuals, 22 per cent by corporations, and 41.1 per cent were under firm, cooperative, or other forms of ownership. Although only a little more than one-fifth of the total number of establishments were under the corporate form of ownership, these establishments reported 62.3 per cent of the total wage earners and 54.9 per cent of the total value of products for the combined industry. In the manufacture of butter and

cheese, particularly in the Central and Western states, a great many establishments are operated by cooperative associations. These associations were not reported separately for 1914, and are included with "all others" in the table. It is probable that a number of

them were incorporated, but in the census statistics they have never been treated as corporations.

Corporations predominated in average number of wage earners and value of products, in all states shown in Table 11 with the exception of Minnesota and Wisconsin.

Table 11		NUMBER OF ESTABLISHMENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.									VALUE OF PRODUCTS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		STATE.			Total.	In establishments owned by—			Per cent of total.			Total.	Of establishments owned by—			Per cent of total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Wisconsin reported a greater number of establishments in each group than any other state. It also shows the greatest number of wage earners and the largest value of products for establishments under "individuals" and "all others" ownerships; but New York led in wage earners and value of products for establishments under corporate ownership.

Table 12 gives, for 1914, the number of establishments, average number of wage earners, and value of products for the butter, cheese, and condensed-milk industry as a whole and for its three branches separately, by character of ownership.

Table 12	NUMBER OF ESTABLISHMENTS.		WAGE EARNERS.		VALUE OF PRODUCTS.	
CHARACTER OF OWNERSHIP.	Num-ber.	Per cent of total.	Average number	Per cent of total.	Amount.	Per cent of total.
BUTTER, CHEESE, AND CONDENSED MILK....	7,628	100.0	23,059	100.0	\$364,285,150	100.0
Individuals.....	2,819	37.0	3,340	14.5	62,025,960	17.0
Corporations.....	1,675	22.0	14,369	62.3	199,846,135	54.9
All others.....	3,134	41.0	5,350	23.2	102,413,055	28.1
BUTTER.....	4,356	100.0	14,149	100.0	243,379,371	100.0
Individuals.....	1,109	25.5	2,100	14.8	32,992,000	13.6
Corporations.....	1,160	26.6	7,754	54.8	123,635,734	50.8
All others.....	2,087	47.9	4,295	30.4	86,751,637	35.6
CHEESE.....	3,082	100.0	2,908	100.0	51,744,779	100.0
Individuals.....	1,700	55.2	1,180	40.6	28,147,118	54.4
Corporations.....	342	11.1	727	25.0	8,558,777	16.5
All others.....	1,040	33.7	1,001	34.4	15,038,884	29.1
CONDENSED MILK.....	190	100.0	6,002	100.0	69,161,000	100.0
Individuals.....	10	5.3	60	1.0	886,842	1.3
Corporations.....	173	91.1	5,888	98.1	67,651,624	97.8
All others.....	7	3.7	54	0.9	622,534	0.9

As measured either by number of wage earners or by value of products, "corporations" is the predominating form of ownership in the industry as a whole, as well as in the manufacture of butter and condensed milk. This is especially true of the condensed-milk branch of the industry, in which the establishments are much larger than in the other branches. In the manufacture of butter the number of establishments under individual and corporate ownership are nearly equal, but the number under other forms of ownership is almost double that in either of the first two groups. This condition is due, in a measure, to the fact that a great number of cooperative associations—which, as already stated, are classified in the "all others" groups—are engaged in the manufacture of butter.

Size of establishments.—The extent to which the industry as a whole and its several branches tend to become concentrated in large establishments is indicated by the statistics given in Table 13.

For 1914, for the industry as a whole, the large establishments—that is, those having products valued at \$100,000 or more—while representing only 8.3 per cent of the total number of establishments, reported 56.9 per cent of the total average number of wage earners, 52.9 per cent of the total value of products, and 60.5 per cent of the total value added by manufacture. The corresponding percentages for 1909 were 4.5, 43.1, 38.5, and 48.7, respectively. On the other hand, the small establishments—those whose products were valued at less than \$20,000—represented 49.2 per cent of the total number of es-

establishments in 1914 but reported only 13 per cent of the total average number of wage earners, 11.3 per cent of the total value of products, and 9.7 per

cent of the total value added by manufacture. The corresponding percentages for these establishments for 1909 were 60.1, 20.9, 19, and 17.6, respectively.

Table 13

INDUSTRY AND VALUE OF PRODUCT.	NUMBER OF ESTABLISHMENTS.				AVERAGE NUMBER OF WAGE EARNERS.				VALUE OF PRODUCTS.				VALUE ADDED BY MANUFACTURE.			
	1914	1909	Per cent distribution.		1914	1909	Per cent distribution.		1914	1909	Per cent distribution.		1914	1909	Per cent distribution.	
			1914	1909			1914	1909			1914	1909			1914	1909
BUTTER, CHEESE, AND CONDENSED MILK.....	7,628	8,479	100.0	100.0	23,059	18,431	100.0	100.0	\$364,285,150	\$274,557,718	100.0	100.0	\$49,259,515	\$39,011,654	100.0	100.0
Less than \$5,000.....	547	833	7.2	9.8	261	365	1.1	2.0	1,725,785	2,610,549	0.5	1.0	268,768	455,171	0.5	1.2
\$5,000 to \$20,000.....	3,206	4,262	42.0	50.3	2,735	3,452	11.9	18.9	39,518,343	49,557,062	10.8	18.0	4,517,688	6,395,108	9.2	16.4
\$20,000 to \$100,000.....	3,242	3,004	42.5	35.4	6,950	6,633	30.1	36.0	130,094,135	116,551,144	35.7	42.5	14,710,825	13,159,519	29.9	33.7
\$100,000 to \$1,000,000.....	609	371	8.0	4.4	10,208	7,464	44.3	40.5	153,473,799	93,905,110	42.1	34.2	22,679,804	17,084,727	46.1	43.8
\$1,000,000 and over.....	24	9	0.3	0.1	2,905	487	12.6	2.6	39,473,118	11,933,853	10.8	4.3	7,082,430	1,917,129	14.4	4.9
BUTTER.....	4,356	4,784	100.0	100.0	14,149	11,563	100.0	100.0	243,379,371	196,060,072	100.0	100.0	30,832,524	25,352,757	100.0	100.0
Less than \$5,000.....	249	302	5.7	6.3	124	142	0.9	1.2	739,520	893,459	0.3	0.5	140,781	166,251	0.5	0.7
\$5,000 to \$20,000.....	1,223	1,686	28.1	35.3	1,399	1,765	9.9	15.3	16,106,458	21,260,540	6.6	10.8	2,336,593	2,955,015	7.6	11.7
\$20,000 to \$100,000.....	2,428	2,511	55.7	52.5	5,677	5,776	40.1	50.0	104,748,338	101,615,135	43.0	51.8	12,079,385	11,441,090	39.2	45.1
\$100,000 and over ¹	456	285	10.5	6.0	6,949	3,880	49.1	33.5	121,785,055	72,290,938	50.0	36.9	16,275,765	10,790,421	52.8	42.6
CHEESE.....	3,082	3,560	100.0	100.0	2,908	2,704	100.0	100.0	51,744,779	44,263,177	100.0	100.0	4,986,094	5,241,411	100.0	100.0
Less than \$5,000.....	297	528	9.6	14.8	132	221	4.5	8.2	982,165	1,708,110	1.9	3.9	127,362	286,147	2.6	5.5
\$5,000 to \$20,000.....	1,976	2,587	64.1	72.1	1,315	1,692	45.2	62.6	23,318,650	28,178,390	45.1	63.7	2,142,896	3,408,400	43.0	65.0
\$20,000 to \$100,000.....	762	456	24.7	12.8	970	639	33.4	23.6	22,371,678	12,744,219	43.2	28.8	1,986,192	1,267,212	39.8	24.2
\$100,000 to \$1,000,000.....	47	9	1.5	0.3	491	152	16.9	5.6	5,072,286	1,632,458	9.8	3.7	729,644	279,662	14.6	5.3
CONDENSED MILK.....	190	135	100.0	100.0	6,002	4,164	100.0	100.0	69,161,000	34,234,469	100.0	100.0	13,440,897	8,417,486	100.0	100.0
Less than \$5,000.....	1	3	0.5	2.2	2	2	(²)	(²)	8,980	8,980	(²)	(²)	2,773	2,773	(²)	(²)
\$5,000 to \$20,000.....	7	9	3.7	6.6	26	25	0.4	0.6	97,335	118,132	0.1	0.3	28,824	31,693	0.3	0.4
\$20,000 to \$100,000.....	52	37	27.4	27.4	303	218	5.0	5.2	2,974,119	2,191,790	4.3	6.4	645,248	451,247	4.8	5.4
\$100,000 and over.....	130	86	68.4	63.7	5,673	3,919	94.5	94.1	66,089,546	31,915,567	95.6	93.2	12,756,825	7,931,773	94.9	94.2

¹ Includes the group "\$1,000,000 and over."

² Less than one-tenth of 1 per cent.

³ Includes the group "less than \$5,000."

In the manufacture of butter the establishments in the "\$100,000 and over" class produced 50 per cent of the total value of products in 1914, as against 36.9 per cent in 1909; while those with products valued at less than \$20,000 produced only 6.9 per cent in the later year, as against 11.3 per cent in the earlier.

On the other hand, in the cheese-making branch of the industry the establishments with products valued at \$100,000 and over reported only 9.8 per cent of the total value of products for 1914, as against 3.6 for 1909; while the output of those whose products were valued at less than \$20,000 represented 47 per cent of the total value of products in the later year, as against 67.6 per cent in the earlier.

As already stated, the predominance of the large establishments—those whose products were valued at \$100,000 and over—in the manufacture of condensed milk is most pronounced. In this branch of the industry these establishments reported 95.6 per cent of the total value of products for 1914, as compared with 93.4 per cent for 1909, whereas those with products valued at less than \$20,000 produced but an insignificant fraction of the total output—one-tenth of 1 per cent in 1914, as against three-tenths of 1 per cent in 1909.

The average value of products per establishment for the industry as a whole in 1914 was \$47,756; for the butter-making branch, \$55,872; for the cheese-making branch, \$16,789; and for the manufacture of con-

densed milk, \$364,005. The corresponding averages for 1909 were \$32,381, \$40,980, \$12,433, and \$253,589, respectively.

In some respects, and especially from the standpoint of conditions under which wage earners are employed, the best classification of establishments with reference to size is that based on number of wage earners. Table 14 presents such a classification for the industry as a whole, showing, for 1914 and 1909, by states reporting more than 500 wage earners each for the later year, the number of establishments and average number of wage earners, grouped according to number of wage earners employed.

For the combined industry in 1914 the average number of wage earners per establishment was only 3, as compared with 2.2 in 1909. For 839 establishments in 1914 and for 1,025 in 1909 no wage earners are shown. These were small establishments in which the work was largely done by the proprietors or firm members. In some cases they employed a few wage earners for short periods, but the number was so small and the period of employment so short that in computing the average number as described in the "Explanation of terms," no wage earners could be shown. Establishments employing from 1 to 20 reported 13,639 wage earners, or nearly three-fifths of the total; those employing from 21 to 100 reported 7,080, or more than three-tenths; and those employing from 101 to 500 reported 2,340, or a little more than one-tenth of the total.

Table 14

Table 14	STATE.	Census year.	ESTABLISHMENTS EMPLOYING—														
			TOTAL.		No wage earners.	1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 500 wage earners.	
			Estab-lish-ments.	Wage earners (average number).		Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.
United States.....	1914	7,628	23,059	839	6,148	8,899	461	4,740	117	3,718	49	3,362	12	1,691	2	649	
	1909	8,479	18,431	1,025	6,992	9,258	340	3,376	80	2,490	35	2,362	7	945			
California.....	1914	201	1,044	24	127	274	41	423	8	243			1	104			
	1909	161	597	14	118	227	26	290	3	80							
Illinois.....	1914	267	1,755	23	195	370	30	302	11	424	8	659					
	1909	295	1,732	29	232	348	16	162	9	301	5	363	4	558			
Indiana.....	1914	120	719	5	83	149	23	242	7	211	2	117					
	1909	132	488	6	107	168	16	170	1	22	2	128					
Iowa.....	1914	490	1,333	22	428	667	32	315	6	211	2	140					
	1909	512	1,231	29	444	707	31	285	8	239							
Kansas.....	1914	61	761	3	37	76	13	134	4	120	2	157	2	274			
	1909	60	348	5	41	81	11	122	2	58	1	87					
Michigan.....	1914	364	1,367	23	303	582	25	243	9	265	4	277					
	1909	435	1,073	27	378	607	25	267	3	90	2	109					
Minnesota.....	1914	807	1,458	36	744	1,080	24	241	2	67	1	61					
	1909	784	1,184	41	728	1,017	13	111	2	56							
Nebraska.....	1914	48	696	5	25	48	12	142	1	48	3	196	2	262			
	1909	37	383	3	22	44	7	81	2	69	3	189					
New York.....	1914	1,144	3,235	152	914	987	50	543	18	547	7	459	2	361	1	338	
	1909	1,552	2,866	234	1,249	1,366	42	402	21	673	5	321	1	104			
Ohio.....	1914	286	1,480	37	197	314	37	379	11	323	1	66	3	398			
	1909	325	1,067	27	266	329	24	249	3	82	4	289	1	118			
Pennsylvania.....	1914	387	1,309	46	302	465	29	289	3	110	7	445					
	1909	536	1,177	79	425	645	25	247	5	137	2	148					
Washington.....	1914	101	860	5	75	165	14	130	4	121	2	133			1	311	
	1909	97	735	6	73	141	11	102	3	121	3	206	1	165			
Wisconsin.....	1914	2,431	3,717	372	1,990	2,353	51	484	13	430	4	262	1	188			
	1909	2,630	2,863	447	2,144	2,359	34	285	3	104	2	115					

Engines and power.—Table 15 shows, for 1914, 1909, and 1904, for the industry as a whole, the number and horsepower of engines and motors employed in generating power (including electric motors operated by

rented current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting.

Table 15

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
				Amount.			Per cent distribution.		
				1914	1909	1904	1914	1909	1904
Primary power, total.....	9,604	7,775	7,528	130,862	101,349	93,845	100.0	100.0	100.0
Owned.....	7,252	7,133	7,395	113,232	95,771	92,134	86.5	94.5	98.2
Steam engines and turbines ¹	6,235	6,555	7,031	104,729	90,933	88,923	80.0	88.8	94.8
Internal-combustion engines.....	949	509	277	7,229	3,373	1,800	5.5	3.3	1.9
Water wheels, turbines, and motors.....	68	69	87	1,274	1,465	1,411	1.0	1.4	1.5
Rented.....	2,352	642	133	17,630	5,578	1,711	13.5	5.5	1.8
Electric.....	2,352	642	133	17,027	5,366	1,597	13.0	5.3	1.7
Other.....	.....	.....	.....	603	212	114	0.5	0.2	0.1
Electric.....	3,558	1,246	291	23,061	8,276	2,378	100.0	100.0	100.0
Rented.....	2,352	642	133	17,027	5,366	1,597	73.8	64.8	67.2
Generated by establishments reporting.....	1,206	604	158	6,034	2,910	781	26.2	35.2	32.8

¹ Figures for horsepower include for 1909 and 1904 the amounts reported under the head of "other" owned power.

The amount of power used in the butter, cheese, and condensed-milk industry was first ascertained at the census of 1889, when 25,526 horsepower was reported. Ten years later 88,062 horsepower was shown. The increase in primary power between 1904 and 1914 amounted to 37,017 horsepower, or 39.4 per cent. The bulk of this growth is accounted for by the in-

creases in steam and rented electric power. In the former the gain for the decade was 15,806 horsepower, or 17.8 per cent, and in the latter it was 15,430 horsepower, or nearly 1,000 per cent. A considerable increase—more than 300 per cent—is also shown for the power generated by internal-combustion (gas, gasoline, and oil) engines.

In 1914, as in previous census years, steam power formed the major part of the primary power used in the industry, but its relative importance shows a continuous decrease from census to census. In 1899, 96.1 per cent of the total primary power reported was derived from steam, whereas in 1914 the corresponding percentage was only 80. The proportion represented by rented electric power, on the other hand, increased from four-tenths of 1 per cent of the total horsepower in 1899 to 13 per cent in 1914.

Fuel.—Closely related to the subject of power employed in the industry is that of the fuel consumed in generating this power. Table 16 shows, for 1914, the quantity of each kind of fuel used for which data were obtained, for the butter, cheese, and condensed-milk industry as a whole, and for 13 separate states.

Of bituminous coal, the principal kind of fuel used in the industry, the quantity consumed during 1914 amounted to 831,549 tons. Oil and gas have also be-

come of considerable importance as fuel. California, Washington, and Nebraska, in the order in which named, reported most of the oil used for this purpose; and Ohio and Kansas consumed the bulk of the gas.

Table 16.

STATE.	COAL.		Coke (tons, 2,000 lbs.).	Oil, including gasoline (barrels).	Gas (1,000 cubic feet).
	Anthracite (tons, 2,240 lbs.).	Bituminous (tons, 2,000 lbs.).			
United States.....	36,069	831,549	7,146	213,359	213,373
California.....	27	622	25	108,730	816
Illinois.....	301	114,255	185	486	1,501
Indiana.....	22,802	22,802	144	207	57
Iowa.....	264	65,752	322	2,181	
Kansas.....	17,942	17,942	47	4,715	79,782
Michigan.....	3,344	71,742	179	189	20
Minnesota.....	1,277	40,905	497	1,326	60
Nebraska.....	20	28,223	1,800	21,266	
New York.....	17,229	145,424	108	614	8,150
Ohio.....		58,470		159	87,634
Pennsylvania.....	9,058	54,018	100	189	17,010
Washington.....		8,013		50,599	282
Wisconsin.....	801	124,999	182	2,335	23
All other states.....	3,748	78,374	3,587	20,313	18,078

SPECIAL STATISTICS OF MATERIALS AND PRODUCTS.

The special schedule used in collecting the statistics for the butter, cheese, and condensed-milk industry included inquiries as to the quantity and cost of the milk and cream used during the year and the quantity and value of the various products. In the case of co-operative factories, or those in which the materials were not purchased but were handled on fixed terms,

the cost was based on the prices paid for similar materials by other factories in the vicinity.

Quantity and value of principal materials used, by states: 1914.—In Table 17 the quantity and cost of milk, cream, skimmed milk, and sugar used in the manufacture of butter, cheese, and condensed milk in 1914 are shown by states.

Table 17

STATE.	MILK.		CREAM.		SKIMMED MILK.		SUGAR.	
	Pounds.	Cost.	Pounds.	Cost.	Pounds.	Cost.	Pounds.	Cost.
United States.....	8,431,426,426	\$114,297,630	2,384,192,766	\$160,934,127	525,041,086	\$994,201	98,836,640	\$4,408,053
Arizona.....	20,183,625	220,130	5,502,692	401,348			1,500	90
California.....	220,399,848	2,674,002	274,301,608	13,552,104	33,189,402	59,333	546,380	25,024
Colorado.....	22,691,745	344,376	32,266,301	2,095,093	262,000	2,340	22,580	1,270
Connecticut.....	1,768,803	35,552	6,398,243	471,314				
Delaware.....	8,817,819	107,436	801,797	62,431				
Idaho.....	20,592,955	256,623	10,362,172	801,008	10,000	62	16,960	1,050
Illinois.....	566,685,863	8,553,868	93,323,222	5,103,993	27,627,342	46,875	24,998,604	1,121,346
Indiana.....	72,960,150	1,094,128	87,693,732	5,738,341	8,892	624	376,518	23,219
Iowa.....	241,933,578	2,856,052	266,522,854	19,032,304	361,413	2,730	86,015	4,054
Kansas.....	49,214,302	561,981	77,284,342	5,479,708			367,047	17,708
Kentucky.....	9,704,761	158,563	1,727,163	120,534	87,080	989		
Maine.....	49,721,439	795,118	5,176,111	479,753			1,027,431	43,671
Maryland.....	20,150,854	300,983	1,916,514	117,183	1,600	20	26,574	1,448
Massachusetts.....	11,105,498	135,971	7,016,690	513,741				
Michigan.....	535,088,623	7,304,122	123,530,936	8,299,654	11,866,895	36,254	16,282,068	726,587
Minnesota.....	320,032,086	3,958,932	353,710,186	24,187,366	2,451,911	11,281	338,768	19,803
Missouri.....	10,858,169	224,330	52,997,592	3,583,131	1,341,816	10,169	98,620	5,460
Montana.....	3,827,225	62,829	10,334,096	835,003			16,859	1,107
Nebraska.....	9,473,066	239,014	112,155,855	8,294,589	11,310	80	58,004	2,918
Nevada.....	15,342,405	173,985	2,519,535	179,106				
New Hampshire.....	13,723,023	230,300	4,213,965	290,218	48,002	208	7,200	306
New Jersey.....	39,764,059	638,337	148,640	9,810*			843,180	40,686
New Mexico.....	7,000	210	2,945,230	129,132			2,500	175
New York.....	2,049,532,238	27,959,684	53,454,943	3,625,171	77,950,858	197,461	31,800,995	1,384,174
North Dakota.....	2,751,124	53,059	18,247,432	1,278,472	240,000	1,500	102,861	5,567
Ohio.....	292,419,114	4,221,299	135,461,829	10,380,111	20,985,504	51,615	2,185,527	99,798
Oklahoma.....	193,758	3,547	8,391,168	614,800			9,350	495
Oregon.....	104,693,704	1,610,241	39,081,683	2,823,653	418,118	1,663	3,800	228
Pennsylvania.....	607,678,749	8,581,507	33,086,604	2,084,689	214,439,616	271,834	6,287,618	275,523
Rhode Island.....	2,796,355	53,013	175,630	7,756				
South Dakota.....	5,472,697	91,602	29,108,194	2,292,956	122,219	821	4,100	277
Texas.....	6,842,195	113,246	21,787,634	1,470,015	55,025	322	67,485	3,625
Utah.....	58,707,282	782,347	9,710,996	733,468	580,760	1,362	112,089	6,846
Vermont.....	115,859,602	1,722,895	82,593,112	5,324,145	1,042,110	3,177	4,643,269	199,521
Virginia.....	7,766,424	129,786	3,547,287	256,517			99,640	5,003
Washington.....	206,922,411	3,861,938	61,285,884	4,423,916	399,322	4,879	266,019	15,316
West Virginia.....			538,806	33,913				
Wisconsin.....	2,691,720,695	34,552,913	346,307,960	25,246,475	131,536,891	288,572	8,109,599	359,939
Wyoming.....	12,994,961	138,647	4,875,907	321,138			37,230	2,409
All other states.....	1,073,180	15,564	3,779,541	239,868				

The figures for cream and skimmed milk represent the quantities of these materials delivered as such at the factories rather than the quantities actually used in the manufacture of butter, cheese, and other products. Large additional quantities of cream are separated from the whole milk at the butter factories, and, while much of the skimmed milk resulting from this separation is sold or returned to patrons, the quantities used in the manufacture of cheese and casein doubtless far exceed the small quantities reported as purchased. Moreover, in some instances considerable quantities of whole milk and cream are sold by the factories instead of being used for manufacturing purposes. It is evident, therefore, that the figures in the table do not rep-

resent the actual quantities of the specified materials used in the manufacture of the various products.

Wisconsin and New York, the leading states in the quantity of milk consumed, reported 31.9 per cent and 24.3 per cent, respectively, of the total amount of milk used as a material in the manufacture of butter, cheese, and condensed milk in the United States. Minnesota, Wisconsin, California, and Iowa combined reported more than one-half of the cream purchased.

Milk and cream used in leading states.—Table 18 shows, for 1914, 1909, 1904, and 1899, the quantities of milk and cream reported for 13 leading states in 1914 with respect to the value of products for the industry.

Table 18	STATE.	Census year.	Milk (pounds).	Cream (pounds).	STATE.	Census year.	Milk (pounds).	Cream (pounds).
United States.....		1914	9,431,426,426	2,384,192,768	California.....	1914	220,399,848	274,301,808
		1909	9,888,727,303	1,406,143,908		1909	206,222,329	101,128,644
		1904	12,147,304,550	588,186,471		1904	481,091,233	29,504,300
		1899	11,678,082,821	203,673,958		1899	316,287,052	1,151,300
Wisconsin.....		1914	2,691,720,696	346,307,980	Ohio.....	1914	292,419,114	135,461,829
		1909	2,366,154,761	246,838,822		1909	344,686,001	41,291,271
		1904	2,665,903,141	80,032,094		1904	405,702,734	6,582,108
		1899	1,973,762,160	27,026,227		1899	375,013,872	5,700,296
New York.....		1914	2,049,532,238	53,454,943	Pennsylvania.....	1914	607,678,749	33,086,604
		1909	2,422,727,788	17,842,320		1909	787,448,479	16,061,716
		1904	2,716,366,410	6,176,069		1904	946,150,704	4,167,213
		1899	2,309,599,597	2,496,730		1899	927,955,335	3,587,909
Minnesota.....		1914	320,032,086	353,710,188	Washington.....	1914	206,922,411	61,285,864
		1909	645,697,385	236,861,008		1909	150,544,931	29,415,008
		1904	1,072,506,743	57,562,246		1904	66,762,847	23,595,768
		1899	852,728,424	14,816,175		1899	72,061,394	3,071,243
Iowa.....		1914	241,933,578	266,522,854	Nebraska.....	1914	9,473,066	112,155,855
		1909	474,821,988	243,619,568		1909	167,861,401	56,010,365
		1904	1,994,925,394	110,850,356		1904	157,978,290	32,312,868
		1899	1,586,044,620	45,621,241		1899	179,461,039	9,941,850
Illinois.....		1914	566,685,863	93,323,222	Kansas.....	1914	49,214,302	77,284,342
		1909	707,013,502	44,565,553		1909	119,462,779	47,340,211
		1904	809,720,061	11,062,470		1904	97,999,446	36,833,076
		1899	1,038,843,401	4,171,210		1899	415,039,656	5,521,231
Michigan.....		1914	535,038,623	123,539,936	Indiana.....	1914	72,960,150	87,593,732
		1909	478,008,911	83,241,827		1909	119,475,669	27,068,202
		1904	670,230,324	7,714,987		1904	110,349,625	1,225,907
		1899	313,871,971	2,816,106		1899	90,879,807	1,219,764

¹ Exclusive of one establishment engaged in the manufacture of condensed milk.

The consumption of milk increased slightly between 1899 and 1904, but thereafter declined from census to census, the quantity reported for 1914 being less by 27.8 per cent than that for 1899. The consumption of cream, on the other hand, shows a large increase for each of the three five-year periods covered, the amount purchased in 1914 being nearly twelve times as great as that reported for 1899.

Wisconsin, Michigan, and Washington were the only states in which the quantities of milk consumed were greater in 1914 than in 1899, and, together with California, were the only states to show increases for the period 1909-1914.

Quantities of leading products, by states.—Table 19 gives, by states, the quantities of butter, cheese, and condensed milk, as reported at the censuses of 1914, 1909, 1904, and 1899.

Attention is again called to the fact that, in the tables showing separately the quantities of butter, cheese, and condensed milk manufactured, the figures represent the total quantity of each of the given prod-

ucts reported for the industry as a whole, whether made in establishments engaged primarily in the manufacture of that product or in establishments belonging to one of the other branches of the industry. The quantities of these products made in establishments in other industries, however, are not included in the tables themselves, but are shown, so far as available, in footnotes.

The quantity of butter manufactured in the United States shows a considerable increase from census to census. For the fifteen-year period 1899-1914 the increase amounted to 349,683,235 pounds, or 83.2 per cent.

The manufacture of butter in factories was reported from 43 states for 1914, the 3 leading states being Wisconsin, with 116,149,284 pounds; Minnesota, with 111,165,208 pounds; and Iowa, with 92,405,806 pounds. The combined production of butter reported by Wisconsin, Minnesota, Iowa, California, Michigan, and Ohio amounted to 60.3 per cent of the total for the industry.

The production of cheese shows an increase of only 31.3 per cent for the period 1899-1914. For 1899 the factory production of cheese was reported from 34 states. In 1914 only 29 states reported establishments in which cheese was the product of chief value; 15 of these reported smaller quantities for 1914 than for 1899, and 8 states which reported the manufacture of cheese in 1899 did not report any for 1914. The greatest actual increase in the production of cheese during the fifteen-year period is shown for Wisconsin, and the greatest actual decrease for New York. Greater proportional increases and decreases, however, appear for some of the other states.

The increase in the production of condensed milk between 1899 and 1914 amounted to 686,488,717 pounds, or 367.3 per cent. This increase has been accompanied by a wider distribution of the establishments. In 1899 condensed milk was manufactured in only 16 states, Illinois reporting 38.1 per cent of the total production. For 1914 it was reported from 27 states, the output in Illinois and Wisconsin combined amounting to only 36.3 per cent of the total. The greatest increase is shown for Ohio, whose product increased from 100,000 pounds in 1899 to 50,509,848 pounds in 1914. In Kentucky, Nebraska, and Virginia condensed milk was reported for the first time for 1914.

Table 19

STATE.	Census year.	Butter (pounds).	Cheese (pounds).	Condensed and evaporated milk (pounds).	STATE.	Census year.	Butter (pounds).	Cheese (pounds).	Condensed and evaporated milk (pounds).
United States ¹	1914	709,809,781	370,278,599	873,410,504	Maryland.....	1914	677,802	.....	3,901,004
	1909	624,764,053	311,126,317	494,796,544		1909	1,118,530	.....	(²)
	1904	531,478,141	317,144,872	308,485,182		1904	1,816,433	.....	.....
	1899	420,126,546	281,972,324	188,921,787		1899	2,541,716	.....	.....
Arizona.....	1914	1,851,981	(²)	(²)	Massachusetts.....	1914	2,172,813	(²)	(²)
	1909	1,053,869	421,043	(²)		1909	1,888,307	.....	.....
	1904	799,433	161,796	162,000		1904	3,470,323	(²)	.....
	1899	424,083	373,752	.....		1899	4,591,919	250,542	108,000
California.....	1914	58,259,665	3,745,979	(²)	Michigan.....	1914	43,220,077	13,267,145	78,514,655
	1909	37,283,450	1,567,640	(²)		1909	35,511,760	13,382,160	32,404,944
	1904	26,837,386	3,601,051	7,723,021		1904	21,013,000	16,814,856	27,681,608
	1899	13,147,137	2,676,543	4,314,666		1899	7,820,712	10,422,582	18,378,869
Colorado.....	1914	8,862,705	(²)	(²)	Minnesota.....	1914	111,165,208	4,016,570	(²)
	1909	6,351,691	550,622	(²)		1909	88,842,846	2,735,883	.....
	1904	5,054,006	871,673	(²)		1904	62,122,564	3,090,055	79,120
	1899	1,566,639	1,465,257	.....		1899	41,174,469	3,285,019	.....
Connecticut.....	1914	1,486,290	(²)	.....	Missouri.....	1914	16,241,687	165,829	(²)
	1909	1,950,935	.....	(²)		1909	13,261,876	219,112	(²)
	1904	2,903,277	(²)	.....		1904	5,806,724	743,447	.....
	1899	3,888,405	321,263	.....		1899	1,440,616	1,072,751	380,800
Delaware.....	1914	455,698	(²)	.....	Montana.....	1914	3,450,315	(²)	.....
	1909	627,300	(²)	.....		1909	1,807,777	.....	.....
	1904	644,823	(²)	.....		1904	(²)	.....	.....
	1899	960,889	15,000	.....		1899	34,238	.....	.....
Idaho.....	1914	2,813,761	750,810	(²)	Nebraska.....	1914	36,343,424	21,997	(²)
	1909	2,357,386	(²)	.....		1909	23,978,162	77,122	.....
	1904	671,783	182,420	.....		1904	16,085,468	158,470	.....
	1899	432,570	194,380	.....		1899	11,726,180	318,600	.....
Illinois.....	1914	27,332,293	6,377,947	167,425,094	Nevada.....	1914	1,291,888	.....	.....
	1909	24,570,976	4,799,235	114,500,748		1909	1,039,784	.....	.....
	1904	27,339,925	5,301,211	93,425,052		1904	758,184	33,000	.....
	1899	34,055,312	9,055,119	71,257,449		1899	623,402	80,150	.....
Indiana.....	1914	25,637,452	354,792	14,107,675	New Hampshire.....	1914	1,320,103	144,137	.....
	1909	11,712,450	424,567	6,674,660		1909	1,740,235	184,497	.....
	1904	4,742,632	978,903	317,721		1904	3,098,889	207,149	(²)
	1899	3,553,483	1,260,168	204,000		1899	5,034,270	116,741	2,876,157
Iowa.....	1914	92,405,806	855,198	6,574,527	New Jersey.....	1914	569,521	(²)	7,980,751
	1909	88,582,187	999,559	4,984,333		1909	768,857	.....	7,688,412
	1904	71,181,766	2,829,745	(²)		1904	1,178,846	6,700	(²)
	1899	77,233,264	4,242,637	.....		1899	1,325,519	100,000	1,072,000
Kansas.....	1914	29,278,717	(²)	(²)	New York.....	1914	35,385,557	97,614,024	131,574,633
	1909	18,712,568	(²)	(²)		1909	45,897,216	105,194,898	120,601,999
	1904	16,488,131	1,120,883	.....		1904	58,256,504	132,836,482	102,480,355
	1899	18,196,483	2,422,710	144,640		1899	40,663,846	127,386,082	75,447,148
Kentucky.....	1914	606,404	.....	(²)	North Dakota.....	1914	5,814,240	(²)	.....
	1909	549,929	.....	.....		1909	3,683,679	(²)	.....
	1904	239,061	.....	.....		1904	3,013,151	51,894	.....
	1899	184,663	28,000	.....		1899	463,188	225,399	.....
Maine.....	1914	2,713,496	(²)	(²)	Ohio.....	1914	43,064,562	8,717,996	50,509,848
	1909	2,105,622	55,591	(²)		1909	17,491,251	11,860,601	37,655,347
	1904	5,005,907	361,850	(²)		1904	11,591,981	17,351,773	1,947,218
	1899	4,461,399	553,946	2,373,788		1899	8,087,631	18,156,527	100,000

¹ In addition, in 1914, 10,533,086 pounds of butter, valued at \$3,316,342; 933,445 pounds of cheese, valued at \$156,357; 2,096,934 pounds of condensed milk, valued at \$123,357; and 227,356 pounds of casein, valued at \$13,353, were produced by establishments engaged primarily in the manufacture of products other than those covered by the industry designation. There were also reported for that year 5,660,822 pounds of butter, having a value of \$1,851,292; 6,301,365 pounds of cheese, having a value of \$398,550; 7,003,463 pounds of condensed milk, having a value of \$390,991; 620,229 pounds of casein, having a value of \$39,691; and 1,533,380 pounds of powdered milk, having a value of \$113,348, produced in dairies not covered by the statistics of manufactures, whose primary business was the produc-

tion and sale of milk and cream. In 1909, 2,381,212 pounds of butter, 49,413 pounds of part-cream cheese, and 401,300 pounds of condensed milk, and in 1904, 1,971,120 pounds of butter, were reported by establishments engaged primarily in the manufacture of products other than those covered by the industry designation.

² Included with the quantity shown for "all other states," to avoid disclosure of individual operations.

³ The product of 2 establishments in Indiana and 1 in Utah engaged in the manufacture of condensed milk in 1904 was included with that for "all other states," to avoid disclosure of individual operations.

MANUFACTURES.

Table 19—Continued.

STATE.	Census year.	Butter (pounds).	Cheese (pounds).	Condensed and evaporated milk (pounds).	STATE.	Census year.	Butter (pounds).	Cheese (pounds).	Condensed and evaporated milk (pounds).
Oklahoma.....	1914	2,851,538	.....	.....	Vermont.....	1914	21,076,947	2,522,937	16,837,549
	1909	4,110,978	.....	.....		1909	20,227,495	2,762,656	13,342,666
	1904	416,100	.....	.....		1904	27,256,874	4,343,160	(¹)
	1899	53,200	86,378	.....		1899	22,453,381	4,713,105	1,873,556
Oregon.....	1914	11,182,937	6,314,757	23,157,414	Virginia.....	1914	712,444	(¹)	(¹)
	1909	8,472,660	4,218,953	21,788,937		1909	158,853	(¹)	.....
	1904	5,080,599	2,255,592	(¹)		1904	81,803	(¹)	.....
	1899	1,975,357	1,195,564	.....		1899	170,521	57,000	.....
Pennsylvania.....	1914	23,985,125	14,808,573	69,708,917	Washington.....	1914	16,813,044	1,355,423	85,167,152
	1909	30,484,217	11,234,037	26,461,384		1909	11,302,591	422,290	53,614,242
	1904	35,754,841	11,453,424	20,364,700		1904	7,722,911	921,333	13,841,906
	1899	37,137,161	10,267,443	2,862,000		1899	8,198,421	1,482,127	1,962,500
South Dakota.....	1914	10,538,747	.....	.....	Wisconsin.....	1914	116,149,284	205,920,915	149,682,530
	1909	9,495,608	.....	.....		1909	103,884,684	148,065,648	30,573,886
	1904	11,058,460	(¹)	.....		1904	89,155,975	109,423,856	11,514,222
	1899	6,172,107	420,779	.....		1899	61,818,502	77,748,680	3,466,516
Texas.....	1914	7,247,074	.....	(¹)	Wyoming.....	1914	1,536,299	(¹)	.....
	1909	2,133,590	(¹)	(¹)		1909	783,585	(¹)	.....
	1904	266,806	.....	.....		1904	500,515	84,600	.....
	1899	252,714	58,290	.....		1899	.....	.....	.....
Utah.....	1914	3,539,357	1,094,448	(¹)	All other states ⁴	1914	1,755,520	2,229,122	70,218,755
	1909	3,722,784	1,060,122	(¹)		1909	603,965	890,051	24,504,986
	1904	3,586,547	1,029,730	127,800		1904	526,523	379,789	28,820,459
	1899	2,519,214	1,874,179	.....		1899	709,935	70,661	.....

¹ Included with the quantity shown for "all other states," to avoid disclosure of individual operations.

² The products of 2 establishments in Indiana and 1 in Utah engaged in the manufacture of condensed milk in 1904 was included with that for "all other states," to avoid disclosure of individual operations.

³ The product of the 2 establishments reported from Wyoming in 1899 was included with that for "all other states," to avoid disclosure of individual operations.

⁴ All other states embrace: For 1914—Alabama, Arkansas, Georgia, Louisiana, Mississippi, New Mexico, North Carolina, Rhode Island, South Carolina, Tennessee, and West Virginia; and certain products manufactured in Arizona, California, Colorado, Connecticut, Delaware, Idaho, Kansas, Kentucky, Maine, Massachusetts, Minnesota, Missouri, Montana, Nebraska, New Jersey, North Dakota, Texas, Virginia, and Wyoming; for 1909—Alabama, Arkansas, Georgia, Louisiana, New Mexico, Rhode Island, and West Virginia; and certain products manufactured in Arizona, California, Colorado, Connecticut, Delaware, Idaho, Kansas, Maine, Maryland, Missouri, North Dakota, Texas, Utah, and Wyoming; for 1904—Arkansas, Georgia, Rhode Island, Tennessee, and West Virginia; and certain establishments in Colorado, Connecticut, Delaware, Indiana, Iowa, Maine, Massachusetts, Montana, New Hampshire, New Jersey, Oregon, South Dakota, Utah, Vermont, and Virginia (see Notes 2 and 3); and for 1899—Alabama, Arkansas, Georgia, Mississippi, Rhode Island, Tennessee, West Virginia, and Wyoming.

Quantities of leading products, by geographic divisions.—Table 20 shows the principal products of the

butter, cheese, and condensed-milk industry, by geographic divisions, for 1914, 1909, 1904, and 1899.

Table 20.

GEOGRAPHIC DIVISION AND CENSUS YEAR.	BUTTER.		CHEESE.		CONDENSED AND EVAPORATED MILK.		GEOGRAPHIC DIVISION AND CENSUS YEAR.	BUTTER.		CHEESE.		CONDENSED AND EVAPORATED MILK.	
	Pounds.	Per cent of total.	Pounds.	Per cent of total.	Pounds.	Per cent of total.		Pounds.	Per cent of total.	Pounds.	Per cent of total.	Pounds.	Per cent of total.
United States: ¹							East South Central:						
1914.....	769,809,781	100.0	370,278,599	100.0	873,410,504	100.0	1914.....	2,606,404	0.1	.....	.....	(²)	.....
1909.....	624,764,653	100.0	311,126,317	100.0	494,796,544	100.0	1909.....	549,929	0.1	.....	.....	.....	.....
1904.....	531,478,141	100.0	317,144,872	100.0	308,485,182	100.0	1904.....	239,061	0.3	.....	.....	.....	.....
1899.....	420,126,546	100.0	281,972,324	100.0	186,921,787	100.0	1899.....	184,663	0.3	28,000	.....	.....	.....
New England:							West South Central:						
1914.....	2,769,649	3.7	2,667,074	0.7	16,887,549	1.9	1914.....	10,098,612	1.3	.....	.....	(²)	.....
1909.....	27,912,594	4.5	3,002,744	1.0	13,342,666	2.7	1909.....	6,605,402	1.1	(²)	.....	(²)	.....
1904.....	41,735,270	7.9	4,912,159	1.5	(³)	.....	1904.....	810,215	0.1	.....	.....	.....	.....
1899.....	40,429,374	9.6	5,955,597	2.1	7,331,499	3.9	1899.....	474,489	0.2	137,268	(³)	.....	.....
Middle Atlantic:							Mountain:						
1914.....	59,940,203	7.8	112,422,597	30.4	209,264,301	24.0	1914.....	24,077,338	3.1	1,951,613	0.5	(²)	.....
1909.....	77,150,290	12.3	116,428,935	37.4	154,751,795	31.3	1909.....	16,616,876	2.7	2,031,787	0.7	(²)	.....
1904.....	95,190,191	17.9	144,296,606	45.5	122,845,055	39.8	1904.....	11,370,468	2.1	2,913,219	0.9	289,800	0.1
1899.....	79,156,526	18.8	137,753,475	48.9	79,381,148	42.5	1899.....	5,600,146	1.8	3,987,718	1.4	.....	.....
East North Central:							Pacific:						
1914.....	255,403,668	33.2	234,638,795	63.4	458,239,802	52.5	1914.....	86,255,646	11.2	11,416,159	3.1	108,324,566	12.4
1909.....	193,171,121	30.9	178,532,241	57.4	221,809,585	44.8	1909.....	57,058,701	9.1	6,208,883	2.0	275,403,179	15.2
1904.....	153,843,513	28.9	149,870,599	47.3	134,885,821	43.7	1904.....	39,640,896	7.5	6,778,026	2.1	21,564,927	7.0
1899.....	116,330,640	27.5	116,643,076	41.4	93,406,834	50.0	1899.....	18,320,915	4.4	5,354,234	1.9	6,277,166	3.4
West North Central:							Production in states which can not be distributed by geographic divisions without disclosing individual operations:						
1914.....	301,787,829	39.2	4,871,768	1.3	6,574,527	0.8	1914.....	870,650	0.1	2,310,593	0.6	70,218,755	8.0
1909.....	243,551,926	39.0	4,031,676	1.3	4,984,333	1.0	1909.....	165,073	(²)	890,051	0.3	24,504,986	5.0
1904.....	185,706,254	34.9	7,994,474	2.5	79,120	(²)	1904.....	265,314	(²)	379,789	0.1	28,820,459	9.3
1899.....	156,406,307	37.2	11,982,895	4.2	525,140	0.3	1899.....	492,400	0.1	58,061	(²)	.....	.....
South Atlantic:													
1914.....	1,999,282	0.3	(²)	.....	3,901,004	0.4							
1909.....	1,982,741	0.3	(²)	.....	(²)	.....						
1904.....	2,676,959	0.5	(²)	.....	.....	.....				
1899.....	3,731,086	0.9	72,000	(²)	.....	.....					

¹ In addition, in 1914, 10,533,086 pounds of butter, 933,445 pounds of cheese, and 2,096,934 pounds of condensed milk; in 1909, 2,381,212 pounds of butter, 49,413 pounds of cheese, and 401,300 pounds of condensed milk; and in 1904, 1,971,120 pounds of butter were reported by establishments engaged primarily in the manufacture of products other than those covered by the industry designation. There were also reported, for 1914, 5,660,822 pounds of butter, 6,301,355 pounds of cheese, and 7,605,463 pounds of condensed milk manufactured in dairies, not covered by the statistics of

manufactures, whose primary business was the production and sale of milk and cream.

² Quantities not shown by states in Table 19 are included under "production in states which can not be distributed by geographic divisions without disclosing individual operations."

³ Less than one-tenth of 1 per cent.

In the production of butter, the three divisions of most importance in 1914 were the West North Central, the East North Central, and the Pacific, ranking in the order in which named. The West North Central division produced 39.2 per cent of the total quantity of butter reported for the industry in 1914; the East North Central, 33.2 per cent; and the Pacific, 11.2 per cent, these three divisions together reporting over four-fifths of the total. The quantities of butter made in factories of each of these divisions show increases for each five-year period.

The greatest proportionate increase in butter was made by the Pacific division, which furnished only 4.4 per cent of the total output in 1899, while in 1914 the per cent of the total contributed by this division was 11.2, having displaced the Middle Atlantic division, which had ranked third since 1899.

The production in the Middle Atlantic division increased between 1899 and 1904, but decreased during the next five-year period to a figure below that for 1899 and continued to fall off between 1909 and 1914, forming a smaller percentage of the total at each successive census. Of the remaining divisions, only two, the New England and the South Atlantic, reported a smaller output in 1914 than in 1899. In the Mountain and West South Central divisions the increases during each five-year period were considerable, and the proportions which these divisions contributed to the total production also increased from census to census. Of the total factory production of cheese at each census, more than nine-tenths was reported from the East North Central and Middle Atlantic divisions. In 1899 the Middle Atlantic division ranked first in quantity of cheese reported, but at subsequent censuses it was outranked by the East North Central division. The production in the latter division and the percentage which it formed of the total for the industry show uninterrupted increases throughout the period from 1899 to 1914.

The manufacture of condensed milk, like that of cheese, is confined largely to the Middle Atlantic and East North Central divisions, which together produced more than three-fourths of the total output in 1914 and 1909, as against more than four-fifths in 1904

and more than nine-tenths in 1899. Both divisions show large increases in production during each of the three five-year periods covered by the table, and the proportion which the output of the East North Central states formed of the total also increased during the two five-year periods between 1904 and 1914, but the proportion for the Middle Atlantic states has declined from census to census. The decline between 1899 and 1909 in the proportion which the combined output of these two divisions formed of the total was due chiefly to the great increase in the production of the Pacific Coast division.

Quantity and value of products, by states: 1914.—Table 21 shows in detail, for 1914, the products of the industry in the several states.

In addition to the products shown in the table, 20,454,051 pounds of powdered milk, having a value of \$1,968,259, were reported. Of this amount, 3,213,267 pounds, valued at \$270,797, were reported from Michigan; 9,372,177 pounds, valued at \$1,105,335, from New York; and 3,596,145 pounds, valued at \$159,416, from Wisconsin. The remainder can not be given by states without disclosing individual operations.

Sugar of milk (4,051,320 pounds), having a value of \$400,613, was also reported, but the distribution by states can not be given.

In 1914 whey was sold to the value of \$72,979, an increase of \$19,102 over the amount reported sold at the census of 1909. Michigan and New York reported 62.3 per cent of the total value in 1914 and 49 per cent in 1909.

Quantity and value of products, United States as a whole.—Table 22 (p. 20) shows in detail, for the United States as a whole, the products of the industry for 1914, 1909, 1904, and 1899.

Of the total value of products for the United States in 1914, butter represented 59.8 per cent, cheese 13.8 per cent, and condensed milk 16.1 per cent. The other products of the industry, which comprise casein, powdered milk, and sugar of milk, together with its by-products, consisting of cream, skimmed milk, butter-milk, and whey, contributed the remaining 10.2 per cent.

BUTTER, CHEESE, AND CONDENSED MILK—DETAILED

Table 21	STATE.	BUTTER.						CHEESE.					
		Total.		Packed solid.		Prints or rolls.		Total.		Full-cream.		Part-cream.	
		Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
1	United States ¹	769,809,781	\$218,021,600	476,895,792	\$132,259,918	292,913,989	\$85,761,772	370,278,599	\$50,377,018	332,690,891	\$47,432,597	18,318,437	\$1,542,280
2	Arizona.....	1,851,981	509,995	88,570	23,028	1,763,411	486,967	(²)	(²)	(²)	(²)	(²)	(²)
3	California.....	58,239,665	16,583,329	18,773,252	5,239,215	39,466,413	11,344,114	3,745,979	583,501	3,626,853	573,191	119,126	10,310
4	Colorado.....	8,862,705	2,513,679	2,741,353	783,137	6,121,352	1,730,542	(²)	(²)	(²)	(²)	(²)	(²)
5	Connecticut.....	1,486,290	492,165	210,742	63,553	1,275,548	428,612	(²)	(²)	(²)	(²)	(²)	(²)
6	Delaware.....	455,698	131,356	73,043	20,497	382,655	110,859	(²)	(²)	(²)	(²)	(²)	(²)
7	Idaho.....	2,813,761	812,023	666,613	181,128	2,147,148	630,895	(²)	(²)	(²)	(²)	(²)	(²)
8	Illinois.....	27,332,293	7,062,297	15,404,541	4,509,095	11,927,752	3,453,202	6,377,947	712,842	4,090,100	590,024	253,173	20,435
9	Indiana.....	25,637,452	7,168,947	14,519,112	3,937,543	11,088,340	3,231,404	354,792	29,227	76,453	10,339	278,339	18,891
10	Iowa.....	92,405,806	25,011,327	71,194,290	19,025,043	21,211,516	5,986,284	855,198	125,171	767,757	111,895	58,873	11,721
11	Kansas.....	29,278,717	7,773,147	12,770,193	3,357,537	16,508,524	4,415,610	(²)	(²)	(²)	(²)	(²)	(²)
12	Kentucky.....	606,404	206,475	157,804	47,129	448,600	159,346	(²)	(²)	(²)	(²)	(²)	(²)
13	Maine.....	2,713,496	850,773	688,425	208,365	2,025,071	642,408	(²)	(²)	(²)	(²)	(²)	(²)
14	Maryland.....	677,802	202,576	248,921	70,368	428,881	132,208	(²)	(²)	(²)	(²)	(²)	(²)
15	Massachusetts.....	2,172,813	716,778	740,089	230,157	1,432,724	486,621	(²)	(²)	(²)	(²)	(²)	(²)
16	Michigan.....	43,220,077	12,416,504	32,925,588	9,365,152	10,294,489	3,051,352	13,267,145	1,773,576	11,045,713	1,588,656	686,522	64,644
17	Minnesota.....	111,165,208	30,921,337	94,783,253	26,173,015	16,381,955	4,748,322	4,016,570	496,215	3,350,598	472,850	665,972	23,365
18	Missouri.....	16,241,687	4,454,646	7,254,182	1,961,029	8,987,505	2,493,617	165,829	15,494	(²)	(²)	(²)	(²)
19	Montana.....	3,450,315	998,763	1,373,035	385,846	2,077,280	612,917	(²)	(²)	(²)	(²)	(²)	(²)
20	Nebraska.....	26,343,424	10,001,032	20,429,859	5,519,611	15,913,565	4,481,421	21,997	3,358	(²)	(²)	(²)	(²)
21	Nevada.....	1,291,888	389,648	29,140	7,415	1,262,748	382,233	(²)	(²)	(²)	(²)	(²)	(²)
22	New Hampshire.....	1,320,103	443,340	349,965	112,577	970,138	330,763	144,137	20,213	144,137	20,213	(²)	(²)
23	New Jersey.....	569,521	196,135	81,226	24,869	488,295	171,296	(²)	(²)	(²)	(²)	(²)	(²)
24	New Mexico.....	731,532	204,999	251,205	69,000	480,327	135,999	(²)	(²)	(²)	(²)	(²)	(²)
25	New York.....	35,385,557	10,551,007	23,526,187	6,871,975	11,859,370	3,670,032	97,614,024	13,840,244	86,015,482	12,556,953	6,812,375	659,572
26	North Dakota.....	5,814,240	1,506,492	4,518,736	1,161,820	1,295,504	344,672	(²)	(²)	(²)	(²)	(²)	(²)
27	Ohio.....	43,064,562	12,520,138	23,616,649	6,719,266	19,447,913	5,800,872	8,717,996	1,051,795	6,104,862	881,369	1,797,534	78,564
28	Oklahoma.....	2,851,538	740,811	1,156,513	286,970	1,695,025	453,841	(²)	(²)	(²)	(²)	(²)	(²)
29	Oregon.....	11,182,937	3,306,464	3,714,736	1,022,496	7,468,201	2,283,968	6,314,757	952,101	6,247,435	944,071	(²)	(²)
30	Pennsylvania.....	23,985,125	7,738,208	7,221,417	2,099,201	16,763,708	5,639,007	14,808,573	1,518,862	8,541,623	1,277,197	3,455,599	133,728
31	Rhode Island.....	(²)	(²)	(²)	(²)	(²)	(²)	102,517	7,458	(²)	(²)	(²)	(²)
32	South Dakota.....	10,538,747	2,760,251	8,335,726	2,164,290	2,203,021	595,961	(²)	(²)	(²)	(²)	(²)	(²)
33	Texas.....	7,247,074	1,901,468	1,080,011	282,562	6,167,063	1,618,876	(²)	(²)	(²)	(²)	(²)	(²)
34	Utah.....	3,539,357	1,051,143	1,415,751	412,040	2,123,606	639,103	1,094,448	153,252	1,094,448	153,252	(²)	(²)
35	Vermont.....	21,076,947	6,442,883	9,999,182	2,991,678	11,077,765	3,451,205	2,522,937	378,953	2,114,221	337,372	328,080	26,049
36	Virginia.....	712,444	215,435	876,187	110,659	336,257	104,776	(²)	(²)	(²)	(²)	(²)	(²)
37	Washington.....	16,813,044	5,107,803	5,407,684	1,550,648	11,405,380	3,557,155	1,355,423	214,710	1,355,423	214,710	(²)	(²)
38	West Virginia.....	153,338	47,530	153,338	47,530	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)
39	Wisconsin.....	116,149,284	32,475,633	89,745,906	24,981,447	26,403,378	7,494,186	205,620,915	28,124,073	195,520,031	27,333,907	3,547,700	471,804
40	Wyoming.....	1,536,299	429,102	318,431	86,811	1,217,868	342,291	(²)	(²)	(²)	(²)	(²)	(²)
41	All other states.....	870,650	266,051	525,027	156,186	345,623	109,865	2,877,415	375,973	2,595,755	366,601	315,144	23,202

¹ In addition, 10,533,086 pounds of butter, valued at \$3,316,342; 933,445 pounds of cheese, valued at \$156,357; 2,096,934 pounds of condensed milk, valued at \$123,357; and 227,356 pounds of casein, valued at \$13,353, were produced by establishments engaged in the manufacture of products other than those covered by the industry designation. There were also reported 5,660,622 pounds of butter, having a value of \$1,851,292; 6,301,365 pounds of cheese, having a value of \$398,550; 7,605,463 pounds of condensed milk, having a value of \$390,991; 620,229 pounds of casein, having a value of \$39,091; and 1,533,860 pounds of powdered milk, having a value of \$113,348, made in dairies not covered by the statistics of manufactures, whose primary business was the production and sale of milk and cream.

² Figures included with those for "all other states," to avoid disclosure of individual operations.

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CHEESE—CON.		CONDENSED AND EVAPORATED MILK.										CREAM SOLD.		SKIM-MED MILK SOLD.	BUT-TER-MILK SOLD.	CASEIN SOLD.	
Skimmed and other kinds.		Total.		Sweetened.		Unsweetened.		Evaporated.		Pounds.	Value.	Value.	Value.	Pounds.	Value.		
Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Value.	Value.	Pounds.	Value.		
19,299,271	\$1,402,141	873,410,504	\$58,747,252	267,869,955	\$21,585,139	331,892,914	\$19,928,014	273,647,635	\$17,234,099	123,511,348	\$13,802,063	\$786,050	\$1,278,700	18,570,220	\$977,770		
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	391,368	49,321	.....	2,283	.....	.....
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	6,122,772	691,888	53,886	81,875	1,887,881	105,987		
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	242,599	22,493	3,635	24,134	.....	.....
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	591,814	62,585	.....	8,251	.....	.....
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	523,735	49,004	2,405	8,046	30,143	1,552		
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	858,541	78,972	.....	6,097	400	20	
2,034,674	102,383	107,425,094	11,256,447	58,857,984	4,937,077	51,823,055	3,052,538	56,744,055	3,206,832	11,966,350	1,073,690	97,036	86,399	619,104	44,180		
28,568	1,555	14,107,675	823,727	8,857,984	4,937,077	51,823,055	3,052,538	56,744,055	3,206,832	2,456,812	256,634	1,920	35,597	.....	.....
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2,933,142	299,071	1,113	97,691	34,000	716		
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	605,423	86,930	4,672	58,539	.....	1	
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	360,794	45,959	3,724	24,279	22,200	222		
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2,737,800	308,144	195,004	52,921	220,260	6,922		
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	1,412,090	97,329	3,117	620	.....	1	
1,534,910	120,276	3,901,004	204,552	3,901,004	204,552	3,901,004	204,552	3,901,004	204,552	678,981	68,970	1,437	13,112	251,358	11,966		
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	7,004,889	901,054	19,999	59,340	4,600	138		
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	3,401,449	293,897	5,479	80,312	32,500	964		
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	584,415	59,074	2,248	39,818	.....	1	
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	191,640	34,791	5,897	11,813	.....	1	
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	914,003	74,687	1,173	36,728	.....	2	
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	255,248	28,538	.....	2,352	.....	2
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	1,227,612	145,765	5,947	2,513	.....	2	
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	1,034,650	109,248	2,537	104	61,313	3,210		
4,786,167	623,719	131,574,633	10,600,913	72,487,665	6,628,171	37,451,467	2,423,370	21,635,501	1,549,372	28,074,200	4,812,170	100,892	131,574	6,986,605	462,299		
815,000	91,862	50,509,848	3,066,631	3,436,823	199,962	24,682,815	1,258,044	22,390,210	1,608,625	307,547	30,941	20	5,872	.....	2	
67,322	8,030	23,15															

Table 22	1914	1909	1904	1899
Products, total value..	\$364,285,150	\$274,557,718	\$168,182,789	\$130,783,349
Butter:				
Pounds.....	769,809,781	624,764,653	531,478,141	420,126,546
Value.....	\$218,021,690	\$179,510,619	\$113,189,453	\$84,079,754
Packed solid—				
Pounds.....	476,895,792	410,692,616	364,432,996	328,956,590
Value.....	\$132,259,918	\$115,095,056	\$74,453,306	\$63,961,893
Prints and rolls—				
Pounds.....	292,913,989	214,072,037	167,045,145	91,169,956
Value.....	\$85,761,772	\$64,412,563	\$38,706,147	\$20,117,861
Cheese:				
Pounds.....	370,278,599	311,126,317	317,144,872	281,972,324
Value.....	\$50,377,018	\$43,239,924	\$28,611,760	\$26,519,829
Full-cream—				
Pounds.....	332,690,891	287,110,383	239,652,634	225,776,105
Value.....	\$47,432,597	\$40,817,073	\$22,024,853	\$21,363,477
Part-cream—				
Pounds.....	18,318,437	10,803,392		
Value.....	\$1,542,280	\$1,188,000		
Skimmed—				
Pounds.....	13,893,692	7,770,812	3,459,582	(¹)
Value.....	\$748,586	\$429,519	\$148,568	(¹)
Other kinds—				
Pounds.....	5,375,579	5,441,730	74,032,656	56,196,219
Value.....	\$653,555	\$905,332	\$6,438,339	\$5,156,352
Condensed and evaporated milk:				
Pounds.....	873,410,504	494,796,544	308,485,182	186,921,787
Value.....	\$68,747,252	\$33,563,120	\$20,149,282	\$11,889,792
Sweetened—				
Pounds.....	267,899,955	214,518,310	198,355,189	(¹)
Value.....	\$21,585,139	\$17,345,278	\$13,478,376	(¹)
Unsweetened—				
Pounds.....	331,892,914			
Value.....	\$19,928,014	280,278,234	110,129,993	(¹)
Evaporated—				
Pounds.....	273,647,635	\$16,217,851	\$6,670,906	(¹)
Value.....	\$17,234,099			
Cream sold:				
Pounds.....	123,511,348	81,211,374	28,131,914	61,764,552
Value.....	\$13,802,063	\$9,828,972	\$2,364,407	\$4,435,444
Skimmed milk sold:				
Pounds.....	166,340,604	352,594,574	1,161,414,457	2,253,494,156
Value.....	\$788,050	\$629,135	\$1,368,738	\$2,531,460
Buttermilk sold, value..	\$1,278,700			
Casein:				
Pounds.....	18,570,220	13,018,298	11,581,874	12,298,405
Value.....	\$977,770	\$795,544	\$554,099	\$383,581
Whey sold:				
Pounds.....	34,079,339	(¹)	(¹)	(¹)
Value.....	\$72,978	(¹)	(¹)	(¹)
Powdered milk:				
Pounds.....	20,454,051	(¹)	(¹)	(¹)
Value.....	\$1,998,259	(¹)	(¹)	(¹)
Sugar of milk:				
Pounds.....	4,051,320	(¹)	(¹)	(¹)
Value.....	\$400,613	(¹)	(¹)	(¹)
All other products, value..	\$17,852,756	\$6,990,395	\$1,945,050	\$944,489

¹ In addition, 10,533,086 pounds of butter, valued at \$3,316,342; 933,445 pounds of cheese, valued at \$156,357; 2,096,934 pounds of condensed milk, valued at \$123,357; and 227,356 pounds of casein, valued at \$13,353, were produced by establishments engaged primarily in the manufacture of products other than those covered by the industry designation. There were also reported 5,660,822 pounds of butter, having a value of \$1,851,292; 6,301,365 pounds of cheese, having a value of \$398,550; 7,605,463 pounds of condensed milk, having a value of \$390,991; 620,229 pounds of casein, having a value of \$39,691; and 1,533,880 pounds of powdered milk, having a value of \$113,348, as made in dairies, not covered by the statistics of manufactures, whose primary business was the production and sale of milk and cream.

² In addition, 2,381,212 pounds of butter, valued at \$664,171; 49,143 pounds of part-cream cheese, valued at \$5,745; 401,300 pounds of condensed milk, valued at \$24,078; and other dairy products to the value of \$25,388 were produced by establishments engaged primarily in the manufacture of products other than those covered by the industry designation.

³ In addition, 1,971,120 pounds of butter, valued at \$448,729 and other dairy products to the value of \$71,588 were produced by establishments engaged primarily in the manufacture of products other than those covered by the industry designation.

⁴ Not reported separately.

During the fifteen-year period 1899-1914 the output of butter put up in prints or rolls increased much more rapidly than that of butter put up in cubes or tubs—classified by the Census Bureau as “packed solid”—the percentages of increase in quantity for these two items being 221.3 and 45, respectively.

The increase in the manufacture of cheese was not so great during the period 1899-1914 as was that in the other two branches of the industry. Of the total quantity of cheese reported for 1914, 89.8 per cent was full-cream, 4.9 per cent was part-cream, and 3.8 per cent skimmed-milk, the remaining 1.4 per cent being reported under the heading “other kinds,” com-

prising a number of fancy varieties, such as “Neuf-chatel,” “Brie,” etc.

The several kinds of cheese were not uniformly reported at the four censuses. The supplemental schedule used for the industry at the census of 1899 distinguished only two kinds—standard factory and “other kinds”; separate returns for three classes, designated, respectively, standard factory (cheddars or flats), skimmed cheese, and “other kinds,” were made for 1904; and the schedule for 1909 and 1914 was further changed so as to distinguish between full-cream and part-cream cheese and to cover separately a number of varieties which had formerly been classified as “other kinds.”

Sweetened and unsweetened condensed milk were first reported separately at the census of 1904, and at that census and the following one the unsweetened variety also included evaporated milk. In making comparisons between the figures for 1914 and those for earlier years, therefore, it is necessary to combine these two items. The increase in the production of unsweetened condensed and evaporated milk was much more rapid than that in the production of the sweetened variety, the respective percentages of increase for the ten-year period 1904-1914 being 449.8 and 35.1. The proportion which unsweetened and evaporated milk represented of the total production increased from 35.7 per cent in 1904 to 69.3 per cent in 1914.

The quantity of skimmed milk sold shows a very great decrease from census to census. This decrease is due in part to the growing practice of separating the milk on the farm and delivering cream instead of milk to the butter factories, and in part to the increase in the manufacture of condensed skimmed milk, sugar of milk, casein, and powdered milk, for all of which products skimmed milk forms the principal material.

The output of casein declined somewhat in quantity between 1899 and 1904 but shows increases for the next two five-year periods. In value of product, however, a continuous and considerable increase is shown for the entire fifteen-year period. The percentages of increase in quantity and value between 1899 and 1914 were 51 and 154.9 per cent, respectively.

Statistics relative to the manufacture of powdered milk and sugar of milk were not included with those for the butter, cheese, and condensed-milk industry at prior censuses. Some 7,000,000 pounds of these products, however, were reported for the chemical industry for 1909.

The number of cream separators used by the factories decreased from 9,701 in 1899 to 8,842 in 1904, to 5,624 in 1909, and to 5,365 in 1914. This decrease is no doubt due in great part to the increased use of separators on farms, already referred to in connection with the decrease in the quantity of skimmed milk sold.

DETAIL STATE TABLES.

The principal statistics secured by the census inquiry concerning the butter, cheese, and condensed-milk industry are presented, by states, in Tables 23 and 24. Table 23 shows, for 1914, 1909, and 1904, by states, the number of establishments, average,

number of wage earners, primary horsepower, wages, cost of materials, and value of products, as reported for the industry.

Table 24 presents, for 1914, by states, the more detailed statistics of the industry.

TABLE 23.—COMPARATIVE SUMMARY, BY STATES, FOR 1914, 1909, AND 1904.

STATE.	Census year.	Number of establishments.	Wage earners (average number).	Primary horsepower.	Expressed in thousands.			STATE.	Census year.	Number of establishments.	Wage earners (average number).	Primary horsepower.	Expressed in thousands.		
					Wages.	Cost of materials.	Value of products.						Wages.	Cost of materials.	Value of products.
United States.....	1914	7,628	23,059	130,882	\$15,847	\$315,026	\$364,285	Nebraska.....	1914	248	696	11,787	\$486	\$9,791	\$11,082
	1909	8,479	18,431	101,349	11,081	235,546	274,558		1909	37	353	1,032	256	6,435	7,681
	1904	8,926	15,557	93,845	8,413	142,920	163,183		1904	40	253	861	137	2,672	3,326
Arizona.....	1914	7	86	315	88	776	1,072	Nevada.....	1914	11	21	173	21	373	447
	1909	11	58	350	51	358	538		1909	9	16	94	15	289	326
	1904	5	30	263	22	190	267		1904	4	10	67	9	161	197
California.....	1914	201	1,044	4,694	896	17,974	20,466	New Hampshire.....	1914	23	44	310	27	547	657
	1909	161	597	2,496	466	11,140	12,761		1909	29	50	492	31	709	807
	1904	281	603	3,026	414	6,460	7,821		1904	134	63	514	36	730	864
Colorado.....	1914	61	291	1,388	223	2,912	3,597	New Jersey.....	1914	114	67	492	44	730	854
	1909	39	210	657	130	1,924	2,340		1909	20	73	771	42	670	793
	1904	120	97	476	59	1,081	1,290		1904	129	43	353	21	318	395
Connecticut.....	1914	24	63	197	43	527	624	New York.....	1914	1,144	3,235	15,389	2,029	36,979	43,262
	1909	30	105	231	52	623	745		1909	1,552	2,866	16,629	1,607	36,161	42,458
	1904	141	95	299	57	670	815		1904	1,766	2,868	14,322	1,485	26,793	31,648
Delaware.....	1914	110	45	257	28	183	242	North Dakota.....	1914	58	115	669	93	1,464	1,740
	1909	110	32	204	14	211	264		1909	68	62	854	46	891	1,029
	1904	111	25	165	12	160	197		1904	60	55	618	38	478	562
Idaho.....	1914	28	88	857	76	1,165	1,396	Ohio.....	1914	286	1,480	6,677	1,049	15,968	19,326
	1909	18	118	260	77	681	884		1909	325	1,067	3,386	557	7,685	9,690
	1904	16	13	120	10	136	172		1904	431	488	3,462	292	3,729	4,693
Illinois.....	1914	267	1,755	6,184	1,079	18,236	21,792	Oklahoma.....	1914	14	46	282	28	673	809
	1909	295	1,732	6,763	942	14,267	17,798		1909	19	62	427	36	926	1,150
	1904	405	1,735	6,350	829	10,709	13,277		1904	3	11	91	6	66	89
Indiana.....	1914	120	719	3,007	452	7,431	8,824	Oregon.....	1914	118	434	1,827	325	5,502	6,568
	1909	132	488	1,858	262	3,196	3,959		1909	95	420	1,935	290	3,932	4,929
	1904	187	187	1,025	98	1,011	1,291		1904	198	130	715	81	1,361	1,629
Iowa.....	1914	490	1,333	9,048	1,013	24,075	27,606	Pennsylvania.....	1914	387	1,309	7,808	745	13,017	15,687
	1909	512	1,231	8,911	855	22,842	25,850		1909	536	1,177	7,613	556	11,674	13,544
	1904	1,655	1,160	9,944	687	12,896	15,028		1904	645	1,218	9,483	556	9,655	11,581
Kansas.....	1914	61	761	2,752	407	8,710	10,220	South Dakota.....	1914	62	134	988	105	2,577	2,920
	1909	60	348	2,544	211	4,951	6,071		1909	95	139	1,456	112	2,308	2,686
	1904	90	414	2,531	188	3,256	3,946		1904	197	192	1,410	125	1,833	2,183
Kentucky.....	1914	110	122	115	77	116	287	Texas.....	1914	51	174	1,360	115	1,752	2,281
	1909	13	56	164	30	195	275		1909	36	84	477	40	530	660
	1904	3	12	37	5	48	84		1904	10	5	62	4	49	63
Maine.....	1914	17	90	450	55	1,239	1,426	Utah.....	1914	37	264	1,312	144	1,891	2,298
	1909	29	96	523	48	1,098	1,301		1909	37	214	635	116	1,613	1,971
	1904	146	78	455	47	1,045	1,230		1904	149	98	813	55	789	964
Maryland.....	1914	32	61	452	34	463	583	Vermont.....	1914	173	471	2,701	314	7,976	8,696
	1909	44	69	522	39	524	654		1909	186	519	2,944	292	7,056	8,112
	1904	55	80	576	29	399	519		1904	1220	419	2,564	223	5,816	6,416
Massachusetts.....	1914	17	33	158	21	667	814	Virginia.....	1914	113	90	245	48	476	608
	1909	24	56	318	29	548	664		1909	11	16	141	6	54	67
	1904	236	64	354	41	779	877		1904	14	3	14	1	16	20
Michigan.....	1914	364	1,367	6,659	863	18,463	21,550	Washington.....	1914	101	880	3,212	657	9,512	11,508
	1909	435	1,073	4,776	554	12,377	14,287		1909	97	735	2,203	457	5,676	7,271
	1904	371	875	3,794	432	7,027	8,209		1904	88	374	987	219	2,392	2,993
Minnesota.....	1914	1,807	1,458	12,865	1,167	30,770	33,746	Wisconsin.....	1914	2,431	3,717	23,365	2,712	65,326	72,859
	1909	784	1,184	11,874	829	22,707	25,287		1909	2,630	2,863	18,467	1,877	48,006	53,443
	1904	771	1,041	11,511	634	11,140	12,871		1904	2,360	2,298	15,276	1,328	26,406	29,995
Missouri.....	1914	254	361	1,556	202	4,367	5,167	Wyoming.....	1914	114	42	198	35	400	543
	1909	56	159	788	100	2,499	2,959		1909	4	20	79	17	211	269
	1904	54	148	573	69	1,033	1,314		1904	5	11	83	7	95	114
Montana.....	1914	132	71	509	69	1,011	1,218	All other states.....	1914	41	112	604	77	957	1,210
	1909	20	29	235	24	354	419		1909	20	24	250	15	173	225
	1904								1904	36	361	651	157	1,520	1,943

¹ Excludes statistics for one establishment, to avoid disclosure of individual operations.

² Excludes statistics for two establishments, to avoid disclosure of individual operations.

MANUFACTURES.

TABLE 24.—DETAILED STATEMENT FOR THE BUTTER, CHEESE,

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.						Capital.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.	Female.		
								Maximum month.	Minimum month.							
BUTTER.																
1	United States.....	4,356	21,516	2,543	1,872	1,836	1,116	14,149	Je 15,782	Fe 12,646	14,341	13,331	973	34	3	\$59,625,448
2	Arizona.....	4	52	8	7	7	37	Jy 39	Ja 34	39	39	39	39	39	39	354,673
3	California.....	174	1,328	123	113	99	84	909	Jy 957	Ja 854	897	858	39	39	39	3,949,112
4	Colorado.....	56	383	33	36	47	28	239	Je 261	Fe 215	231	188	43	43	43	2,202,728
5	Delaware.....	10	66	2	9	2	8	45	Jy 47	Ap 42	46	46	46	46	46	169,330
6	Idaho.....	23	103	7	11	16	7	62	Jy 77	Fe 49	63	57	4	2	2	387,829
7	Illinois.....	186	816	109	92	58	65	492	Je 551	Ja 444	503	462	40	1	1	1,862,443
8	Indiana.....	111	962	81	59	75	93	654	Au 742	Ja 584	642	591	50	1	1	1,573,486
9	Iowa.....	474	2,254	294	173	448	65	1,274	Je 1,418	Mh 1,117	1,469	1,290	177	2	2	5,143,627
10	Kansas.....	58	930	52	50	74	38	716	No 826	Mh 629	675	554	121	1	1	4,040,046
11	Kentucky.....	10	131	4	4	1	1	122	De 130	Ap 114	130	122	8	8	8	110,994
12	Maine.....	17	118	6	13	3	6	90	Je 99	Ja 77	97	89	8	8	8	415,113
13	Maryland.....	29	66	30	2	1	1	33	Jy 38	De 29	37	36	1	1	1	118,495
14	Massachusetts.....	17	62	13	11	5	5	33	Je 34	Ap 32	34	34	34	34	34	123,907
15	Michigan.....	270	1,202	146	159	69	59	709	Jy 847	Fe 661	780	736	39	5	5	2,580,686
16	Minnesota.....	773	2,152	205	221	228	72	1,426	Je 1,554	Fe 1,302	1,469	1,434	31	3	1	5,774,146
17	Missouri.....	54	552	45	44	60	42	361	Au 437	Fe 286	364	293	71	1	1	1,163,107
18	Montana.....	32	116	16	11	7	11	71	Jy 87	Fe 59	75	69	6	6	6	482,306
19	Nebraska.....	48	966	18	83	90	79	696	Je 1,004	Fe 539	594	455	139	139	139	5,750,795
20	Nevada.....	11	75	43	7	1	1	21	Je 23	No 19	21	21	1	1	1	139,924
21	New Hampshire.....	20	66	12	9	3	2	42	Jy 48	De 38	40	39	1	1	1	180,155
22	New Jersey.....	10	32	9	1	1	2	19	Jy 20	Se 17	20	19	1	1	1	92,734
23	New Mexico.....	6	25	8	3	3	1	10	Je 19	De 6	12	10	2	2	2	59,454
24	New York.....	279	1,180	171	109	50	60	790	Jy 938	Ja 668	847	814	33	33	33	3,133,926
25	North Carolina.....	3	9	2	2	1	1	7	De 8	Se 6	8	8	8	8	8	24,450
26	North Dakota.....	58	178	22	17	13	11	115	Jy 150	Ja 89	115	112	1	2	2	757,057
27	Ohio.....	143	1,727	236	118	133	141	1,099	Jy 1,225	Fe 1,004	1,075	1,081	44	7	7	3,736,633
28	Oklahoma.....	14	75	9	6	6	5	46	Je 53	Ja 39	47	40	7	7	7	553,799
29	Oregon.....	72	477	47	56	68	46	280	Jy 297	Fe 226	252	234	18	18	18	1,325,656
30	Pennsylvania.....	287	1,112	247	80	44	28	713	Au 764	Fe 689	705	689	14	2	2	2,760,391
31	South Dakota.....	62	216	24	22	23	13	134	Jy 165	Ja 106	129	120	9	9	9	638,321
32	Texas.....	51	271	22	30	34	11	174	Jy 193	Ja 160	170	159	11	11	11	1,219,348
33	Utah.....	23	162	11	9	20	4	118	Je 129	Fe 109	126	106	20	20	20	614,061
34	Vermont.....	143	504	84	45	16	29	330	Jy 379	De 278	337	328	5	3	1	963,523
35	Virginia.....	13	119	5	8	11	5	90	Jy 103	Ja 82	91	87	4	4	4	182,909
36	West Virginia.....	3	6	1	1	1	1	5	Oc 6	De 3	6	6	6	6	6	14,105
37	Wisconsin.....	675	2,254	358	158	70	62	1,606	Jy 1,749	Ja 1,458	1,643	1,624	13	6	6	4,782,389
38	Wyoming.....	14	80	4	8	2	4	42	Jy 50	Ja 35	46	36	10	10	10	203,361
39	All other states.....	123	709	47	81	49	33	499			506	495	8	3	3	2,108,829

CHEESE.

1	United States.....	3,082	5,654	2,420	187	111	28	2,908	Je 3,810	Ja 1,692	3,588	3,485	84	19	.....	\$11,189,004
2	Illinois.....	47	160	67	7	1	.....	85	Je 98	Fe 68	93	89	4	4	4	242,763
3	Iowa.....	13	24	10	2	1	.....	11	Oc 14	Mh 9	13	10	1	2	2	43,993
4	Michigan.....	75	229	58	16	5	4	146	Je 164	Ja 132	144	130	14	14	14	480,991
5	Minnesota.....	34	54	17	4	1	.....	32	Je 43	Fe 17	38	38	38	38	38	114,400
6	New York.....	821	1,659	664	43	33	10	909	Je 1,281	Ja 450	1,181	1,150	28	3	3	3,475,379
7	Ohio.....	129	224	118	7	2	.....	97	Je 160	Fe 34	143	142	1	1	1	230,821
8	Oregon.....	41	115	23	41	1	.....	50	Je 77	Ja 19	58	57	1	1	1	140,684
9	Pennsylvania.....	83	242	132	11	13	2	84	Je 113	Fe 45	112	108	4	4	4	440,614
10	Rhode Island.....	3	5	3	.....	.....	.....	2	(⁵) 2	(⁵) 2	2	2	.....	.....	.....	4,105
11	Vermont.....	27	38	12	.....	2	1	23	Oc 40	Ja 10	23	27	1	1	1	75,332
12	Wisconsin.....	1,739	2,689	1,263	45	51	10	1,330	Jy 1,697	Ja 780	1,622	1,587	26	9	9	5,411,082
13	All other states.....	70	215	63	11	2	.....	139			154	145	4	5	5	478,240

CONDENSED MILK AND MILK PRODUCTS, OTHER THAN BUTTER AND CHEESE.

1	United States.....	190	7,625	46	352	1,059	166	6,002	Je 6,956	Ja 5,281	5,794	4,966	793	24	11	\$35,047,852
2	Illinois.....	34	1,393	2	50	140	23	1,178	Jy 1,264	Ja 1,081	1,097	926	161	3	7	6,229,238
3	Indiana.....	6	83	1	6	11	2	63	(⁵) 63	(⁵) 63	63	58	5	5	5	287,999
4	Maryland.....	3	36	.....	4	3	1	28	Je 30	Fe 27	28	28	28	28	28	319,759
5	Michigan.....	19	522	3	30	32	5	452	Jy 540	Mh 411	435	373	62	62	62	2,237,276
6	New Jersey.....	4	58	1	3	2	4	48	Je 60	De 35	53	51	2	2	2	233,570
7	New York.....	44	2,803	7	112	603	45	1,536	Je 1,765	De 1,367	1,600	1,454	145	1	1	8,700,848
8	Ohio.....	14	330	2	16	21	7	284	Je 334	Ja 257	263	223	37	3	3	1,563,791
9	Oregon.....	5	141	.....	8	5	4	124	My 160	Se 104	114	103	9	1	1	812,625
10	Pennsylvania.....	17	647	29	36	48	22	512	My 575	Fe 451	486	399	83	2	2	2,640,210
11	Vermont.....	3	135	.....	5	10	2	118	Je 160	Fe 84	104	95	9	9	9	538,232
12	Wisconsin.....	17	967	.....	32	132	22	781	Je 1,036	Ja 592	726	565	158	3	3	5,580,581
13	All other states.....	24	1,010	1	50	52	29	878			825	691	122	11	1	5,921,323

1 Owned power only.

2 Includes rented power, other than electric.

3 Same number reported for one or more other months.

4 All other states embrace: Alabama, 1 establishment; Arkansas, 2; Connecticut, 22; Georgia, 1; Louisiana, 2; Mississippi, 2; Rhode Island, 2; South Carolina, 1; Tennessee, 2; and Washington, 88.

BUTTER, CHEESE, AND CONDENSED MILK.

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AND CONDENSED-MILK INDUSTRY, BY STATES: 1914.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. ¹	Internal combustion engines. ²	Water wheels and motors. ¹	Electric (rented).	

BUTTER.

\$2,135,883	\$1,834,879	\$10,119,478	\$652,076	\$465,746	\$394,863	\$210,338,235	\$2,208,612	\$243,379,371	\$30,832,524	91,628	69,135	5,809	954	15,730	2,586	1
11,948	9,989	40,702	720	2,602	446,329	7,564	598,162	144,289	162	125	13	24	24	19	7	1
171,016	150,040	805,337	12,778	70,724	30,928	16,577,120	186,112	18,890,200	2,135,968	4,167	1,578	176	45	2,368	3	2
53,687	57,547	195,381	1,280	22,648	8,181	2,497,959	19,917	3,017,062	499,156	1,148	617	27	18	304	133	4
6,700	4,535	28,155	560	2,124	476	175,768	7,160	242,096	59,168	257	257	18	1	390	5	5
16,201	14,684	48,993	6,019	2,379	817,033	16,154	997,459	165,272	495	87	18	390	1	390	6	6
111,784	75,411	326,981	15,550	36,613	10,278	6,895,048	66,514	8,150,639	1,188,977	2,977	2,199	110	668	19	7	7
74,003	107,463	406,800	42,535	14,187	12,758	6,606,115	66,614	7,904,719	1,231,990	2,443	1,416	64	963	3	8	8
181,052	202,821	973,980	283,248	18,011	35,260	23,349,291	232,996	27,028,255	3,425,968	8,870	7,278	697	595	275	9	9
100,910	108,123	379,350	1,140	7,658	22,627	8,153,806	61,026	9,556,878	1,341,146	2,466	1,841	227	397	423	10	10
2,624	300	76,923	1,568	616	111,449	4,801	287,308	171,056	115	80	11	35	35	11	11	11
13,324	4,476	55,007	2,584	172	3,316	1,230,673	8,640	1,426,448	187,135	450	347	14	89	5	12	12
2,400	200	13,443	565	411	633	194,639	3,949	258,719	60,131	317	283	16	18	13	13	13
12,768	2,279	21,491	18,831	1,002	1,152	694,818	2,647	813,783	116,318	158	100	8	50	14	14	14
114,043	84,919	510,981	16,305	18,337	21,013	11,556,297	109,805	13,479,297	1,813,195	4,035	3,234	107	686	116	15	15
179,520	121,198	1,140,617	38,035	50,146	37,024	30,072,956	288,246	33,294,003	2,932,801	12,514	10,172	898	11	1,433	210	16
93,522	80,399	201,804	2,939	22,461	7,596	4,313,926	53,386	5,167,343	800,031	1,556	789	6	761	25	17	17
19,810	15,195	69,473	2,728	4,918	4,470	9,965,923	15,099	11,217,683	206,661	509	224	8	277	18	18	18
172,327	162,171	485,595	5,449	15,374	28,259	9,646,606	144,380	11,082,123	1,291,137	11,787	11,478	86	225	805	19	19
5,413	982	20,390	1,032	360	953	368,693	4,450	446,570	73,727	173	70	20	83	20	20	20
4,448	2,128	25,822	470	1,128	521,657	7,323	636,835	107,855	298	213	8	52	25	21	21	21
780	1,983	10,189	276	786	215,507	3,432	256,873	37,934	109	109	5	31	23	23	22	22
3,820	2,670	6,376	1,102	285	138,588	1,567	217,692	77,537	56	20	4	210	410	174	24	24
87,792	59,764	527,083	17,654	10,431	20,804	10,664,809	148,246	12,426,783	1,613,728	5,632	4,520	492	210	174	24	24
1,500	3,390	8,390	151	50,743	735	63,367	11,889	63,367	11,889	39	37	2	2	25	25	25
12,389	14,123	93,368	1,222	1,725	3,379	1,444,369	20,108	1,739,962	275,215	669	404	100	20	145	26	26
184,018	218,976	822,637	21,119	48,352	33,547	12,308,345	110,320	14,938,908	2,519,943	5,441	3,139	1,009	1,293	193	27	27
14,939	8,880	27,616	79	2,900	2,111	664,980	8,317	808,978	135,681	282	185	4	93	28	28	28
65,832	72,290	202,760	6,990	23,312	7,709	3,532,998	46,504	4,268,652	680,150	1,408	456	28	34	890	29	29
68,590	35,268	409,708	8,903	13,124	13,929	7,272,541	101,722	8,619,651	1,245,388	5,278	4,600	352	92	54	30	30
22,708	25,834	104,503	4,569	8,672	2,552,348	25,011	2,920,842	342,983	988	578	139	271	271	31	31	31
33,357	20,638	115,183	17,094	18,031	4,373	1,710,672	41,328	2,280,779	528,779	1,360	759	274	327	13	32	32
10,333	14,789	60,755	3,432	3,527	920,633	8,895	1,074,843	145,815	347	174	9	14	150	33	33	33
35,556	15,108	220,856	81,705	5,666	8,545	6,395,371	46,433	6,917,182	475,378	2,338	1,570	131	372	15	34	34
9,800	8,019	47,670	3,995	1,470	460,062	15,829	607,640	131,749	245	144	4	97	97	35	35	35
540	2,754	195	101	34,745	138	47,585	12,702	51	12,702	51	51	3	3	26	26	26
130,869	59,813	1,206,701	73,720	19,515	39,410	30,675,533	237,930	34,075,821	3,162,858	9,900	8,414	668	56	762	118	37
10,339	4,901	35,084	500	1,420	1,412	394,612	5,363	543,499	143,524	198	105	16	994	5	39	38
96,723	60,983	395,120	27,338	13,973	18,003	5,675,243	60,051	7,066,604	1,331,310	2,390	1,284	96	16	994	39	39

CHEESE.

\$148,849	\$59,680	\$2,065,684	\$26,917	\$61,545	\$60,424	\$46,304,524	\$454,161	\$51,744,779	\$4,986,094	19,219	17,348	1,456	8	407	50	1
8,575	1,300	61,517	12	3,383	639	773,083	8,661	883,977	102,233	469	390	79				2
1,620	900	5,680		290	203	98,033	1,364	122,506	23,109	76	70	6				3
15,922	5,289	87,948	750	855	300	1,788,293	24,547	2,030,753	217,913	833	797	12		24	45	4
1,335	500	26,340	65	1,142	462	401,562	6,349	452,993	44,452	351	351					5
61,008	27,199	551,417	3,479	16,784	22,085	13,582,644	134,997	15,133,816	1,416,175	4,555	4,144	251		180		6
2,905	1,533	68,276	1,000	3,149	1,344	1,087,741	7,234	1,175,447	130,472	534	488	46				7
7,573	240	46,073	855	1,486	1,189	818,028	7,910	906,599	80,661	132	132					8
10,694	6,605	50,263	1,707	533	1,583	1,220,078	12,064	1,497,340	265,198	769	666	82		21		9
		1,200		480	9	14,740	300	21,619	6,579	3						10
413	408	14,105	1,113	880	687	353,057	2,946	398,450	42,447	106	80	16		3		11
29,245	15,538	1,051,839	17,322	25,021	29,353	25,415,278	233,805	28,075,795	2,426,712	10,899	9,929	943		17	5	12
9,559	168	101,026	604	7,642	2,565	801,987	13,984	1,046,084	230,113	502	301	21	8	172		13

CONDENSED MILK AND MILK PRODUCTS, OTHER THAN BUTTER AND CHEESE.

\$846,924	\$1,104,599	\$3,661,919	\$33,658	\$18,804	\$261,367	\$54,473,336	\$1,246,767	\$69,161,000	\$13,440,897	20,015	18,246	567	312	890	3,398	1
129,131	162,119	690,052	3,421	4,463	56,743	10,268,957	223,369	12,757,704	2,265,378	2,738	2,578	118		42	379	2
12,600	7,204	43,948			1,869	732,207	17,807	909,187	159,173	544	450			94	5	3
13,261	4,075	20,586			641	256,050	8,522	324,591	60,019	135	100			35	24	4
61,125	33,162	264,440		2,183	21,464	4,866,967	116,594	6,039,547	1,055,986	1,791	1,791			5	245	5
3,220	4,470	33,347			1,032	501,601	9,843	597,434	85,990	383	310			73	10	6
235,452	555,029	950,893	10,020	7,741	63,015	12,155,732	292,870	15,701,710	3,253,108	5,202	4,378	327	306	191	666	7
42,681	22,824	157,662			12,626	2,453,443	51,128	3,211,922	707,351	702	686	16		107	8	8
15,935	8,320	76,215			9,794	1,070,998	25,864	1,392,698	295,836	287	190			2	9	9
91,805	56,851	285,439	17,793	1,623	4,334,421	76,056	5,570,308	1,159,831	1,761	1,668	73	6		14	480	10
8,408	11,305	78,002		657	4,083	1,145,998	29,485	1,350,283	201,800	257	245			12	48	11
103,790	147,358	453,503			45,359	8,564,110	198,882	10,706,976	1,943,984	2,576	2,494			82	506	12
129,216	91,882	607,262	2,424	2,137	36,289	8,119,852	196,347	10,568,640	2,252,441	3,639	3,366	33		240	647	13

* Same number reported throughout the year.

† All other states embrace: Arizona, 2 establishments; California, 25; Colorado, 3; Connecticut, 2; Delaware, 1; Idaho, 4; Indiana, 3; Kansas, 1; Maine, 1; Missouri, 1; Montana, 1; Nebraska, 1; New Hampshire, 3; New Jersey, 1; Utah, 12; Virginia, 1; Washington, 7; and Wyoming, 1.

‡ All other states embrace: Arizona, 1 establishment; California, 2; Colorado, 2; Idaho, 1; Iowa, 3; Kansas, 2; Kentucky, 1; Maine, 1; Minnesota, 1; Missouri, 1; Nebraska, 1; Utah, 2; and Washington, 6.

CANNING AND PRESERVING.

By JOHN M. BRADY.

Summary and Analysis.

Summary for the four branches of the industry, 1914.—Table 1 presents a summary of the statistics of the canning and preserving industry as a whole for 1914. It also distinguishes four classes of establishments: (1) establishments whose chief products are canned and preserved fruits and vegetables, including dried and packed fruit put up by packing houses; (2) establishments whose chief products are canned and cured fish including pickled, smoked, and dried fish; (3) establishments whose chief products are canned oysters and clams; (4) establishments whose chief products are pickles, preserves, jellies, sauces, etc.

A subclassification has been made for 1914, however, in which the establishments have been grouped according to the products of chief value under "canned vegetables," "canned fruits," "dried fruit," and "all other"; while under the designation "preserves" were included those establishments manufacturing as their products of chief value "jams, jellies, fruits, butters, etc.," and under the class "pickles and sauces" were included those establishments whose products of chief value are "pickles, olives, sauces, salad dressing, catsups, etc."

The industry being seasonal in character, the returns relate to the "season" of 1914; that is, to the canning and preserving from the crop of that year.

This plan permitted the collection of data for a uniform period, namely, the business year of the concerns engaged in the industry.

The general statistics for the industry do not cover the canning of meats, soups, or other products by meat-packing establishments, statistics for which are included with those for the slaughtering and meat-packing industry. The shucking of oysters, except as done in connection with canning, is not included.

Some of the establishments are engaged in the canning of fruits and vegetables in the summer and fall months and in the canning and preserving of fish and oysters at other times; and pickles, preserves, and sauces are also made by some of the establishments engaged primarily in canning vegetables. This overlapping makes it advisable to present in most of the tables only totals for establishments in all branches of the industry. In the compilation of the statistics, however, each establishment was classified according to its product of chief value, and in Tables 1, 3, 5, and 25, separate figures are given for the four branches of the industry.

Table 1 presents, for 1914, a summary of the statistics for the canning and preserving industry as a whole and for its four branches separately.

Table 1	Total for the industry.	ESTABLISHMENTS ENGAGED PRIMARILY IN CANNING AND PRESERVING—							
		Fruits and vegetables.				Fish.	Oysters.	Pickles, preserves, and sauces.	
		Canned vegetables.	Canned fruits.	Dried fruits.	All other.			Preserves.	Pickles and sauces.
Number of establishments.....	4,220	1,990	208	950	5	330	65	143	529
Persons engaged.....	88,069	39,546	10,651	8,043	89	10,306	2,296	3,250	13,888
Proprietors and firm members.....	4,409	2,137	170	1,211	2	263	60	111	455
Salaried employees.....	9,589	2,970	1,028	477	9	974	149	578	3,404
Wage earners (average number).....	74,071	34,439	9,453	6,355	78	9,069	2,087	2,561	10,029
Primary horsepower.....	120,004	74,099	7,746	6,319	139	10,966	1,895	3,971	11,869
Capital.....	\$172,474,945	\$65,472,955	\$23,435,439	\$9,457,384	\$372,441	\$28,493,738	\$2,076,607	\$7,161,409	\$36,034,972
Salaries and wages.....	38,608,278	13,971,283	5,590,745	2,801,675	48,587	4,948,991	552,063	1,955,167	8,799,767
Salaries.....	11,471,254	3,057,068	1,423,508	617,139	9,072	1,269,992	128,366	761,318	4,204,791
Wages.....	27,137,024	10,914,215	4,167,237	2,184,536	39,515	3,678,999	423,697	1,193,849	4,594,976
Paid for contract work.....	1,899,046	282,358	122,725	17,431	2,992	322,347	8,669	4,780	82,109
Rent and taxes (including internal revenue).....	159,657,900	605,173	142,729	127,264	181,708	375,964	18,726	179,467	446,731
Cost of materials.....	243,439,859	52,385,078	21,665,205	29,051,053	405,213	19,467,153	1,225,206	8,600,542	27,071,964
Value of products.....		79,690,007	33,778,392	35,302,253		31,111,409	2,238,053	12,626,956	48,287,576
Value added by manufacture (value of products less cost of materials).....	83,781,950	27,294,929	12,113,187	6,251,200	223,505	11,644,256	1,012,847	4,026,414	21,215,612

The overlapping among the four branches of the industry, to which reference has been made, embraces products valued at \$9,829,894, distributed as follows: Canned and preserved fruits and vegetables to the

value of \$388,172 reported by establishments engaged primarily in the canning and preserving of fish and of oysters; canned fruits, vegetables, fish, and oysters to the value of \$6,207,642 put up by establishments

whose principal products were pickles, preserves, and sauces; canned and preserved fish and oysters to the value of \$1,309,596, reported by establishments engaged primarily in the canning and preserving of fruits and vegetables; and preserves, pickles and sauces to the value of \$1,924,484 were reported by establishments engaged primarily in canning and preserving fruits and vegetables. In addition, canned and preserved products to the value of \$6,351,270 were reported by establishments engaged primarily in industries other than canning and preserving. The total value of canned and preserved goods reported as by-products by establishments classified either in other branches of the industry than the one to which the products belonged or in entirely separate industries was thus \$16,181,164.

In the canning and preserving industry—and particularly in the fruit and vegetable and fish and oyster branches of it—the processes of manufacture are comparatively simple and inexpensive, for which reason the proportion (65.6 per cent) which the cost of materials and containers represented of the total value of products in 1914 was somewhat greater than the corresponding

proportion (59.3 per cent) for all manufacturing industries combined.

The establishments engaged primarily in the canning and preserving of fruits and vegetables in 1914 represented 74.7 per cent of the total number and reported 61.3 per cent of the total value of products for the industry as a whole; those whose principal products were canned and preserved fish represented 7.8 per cent of the total number and contributed 12.8 per cent of the total value of products; those engaged chiefly in canning and preserving oysters represented 1.5 and 0.9 per cent, respectively, of the total number and the total value of products; and those engaged chiefly in the production of pickles, preserves, and sauces represented 15.9 per cent of the total number and manufactured 25 per cent of the total products, measured by value.

It should be noted that the cost of cans and other containers is an important factor in the cost of materials.

Comparison with earlier censuses, for the industry as a whole.—Table 2 summarizes the statistics for the canning industry as a whole for each census from 1899 to 1914 and gives percentages of increase.

	NUMBER OR AMOUNT.				PER CENT OF INCREASE. ¹		
	1914	1909	1904	1899	1909-1914	1904-1909	1899-1904
Number of establishments.....	4,220	3,767	3,168	2,570	12.0	18.9	23.3
Persons engaged.....	88,069	71,972	66,022	(²)	22.4	9.0	—
Proprietors and firm members.....	4,409	4,244	3,450	(²)	3.9	23.0	—
Salaried employees.....	9,589	7,760	5,628	4,199	23.6	37.9	34.0
Wage earners (average number).....	74,071	59,968	56,944	57,012	23.5	5.3	-0.1
Primary horsepower.....	120,004	81,179	60,831	38,624	47.8	33.1	57.5
Capital.....	\$172,474,915	\$119,207,127	\$79,245,890	\$55,480,983	44.7	50.4	42.8
Salaries and wages.....	38,688,278	28,945,466	21,567,056	17,183,832	43.5	21.9	25.5
Salaries.....	11,471,254	7,803,623	5,230,704	3,478,727	45.9	50.3	50.4
Wages.....	27,197,024	19,081,843	16,336,352	13,705,105	42.5	16.8	19.2
Paid for contract work.....	840,419	501,173	359,079	(²)	67.7	39.6	—
Rent and taxes (including internal revenue).....	1,899,046	1,074,279	775,703	(²)	76.8	—	—
Cost of materials.....	159,657,909	101,823,059	83,147,336	63,667,568	56.8	22.5	30.6
Value of products.....	243,439,859	157,101,201	130,465,976	99,335,464	55.0	20.4	31.3
Value added by manufacture (value of products less cost of materials).....	83,781,950	55,278,142	47,318,640	35,667,896	51.6	16.8	32.7

¹ A minus sign (—) denotes decrease.

² Figures not available.

³ Exclusive of internal revenue.

Comparable statistics for the industry as a whole are not available for censuses prior to 1889. The canning and preserving of food products is an industry which lies near the border line between manufacturing on the one hand and agriculture and fishing on the other, and for this reason the several branches of the industry have not always been treated in census reports as manufactures.

For 1879 there were reported 520 establishments engaged in the canning and preserving of fruits and vegetables and in the manufacture of pickles, preserves, and sauces, which gave employment to an average of 32,835 wage earners and reported products valued at \$20,006,918; but statistics as to the canning and preserving of fish and oysters in 1879 are not available.

The value of products reported for 1914 was more than five times as great as that for 1889, when there were 1,312 establishments reported with products valued at \$46,625,539.

The average number of wage earners reported showed no great change between 1899 and 1909, but during the following five years it increased by nearly one-fourth. The relationship between the number of wage earners and the value of products, however, changed greatly between 1899 and 1914, the average value of products per wage earner having increased during this period from \$1,742 to \$3,286. This increase was due in part to advance in prices and in part to the introduction of new and improved machinery. The extent of the last-named change is indicated in a general way by the fact that the rates of increase from census to census in primary horsepower have been much greater than those in average number of wage earners.

Comparison with earlier censuses, for the four branches of the industry.—Table 3 shows, for the four branches of the industry separately, the most important items for 1914 and 1904 and the per cent of increase.

Substantial increases are shown for the period 1904-1914 in all items, except proprietors and firm members, for three of the four branches of the industry. For the canning and preserving of fruits and vegetables, by far the most important branch, the rate of increase in average number of wage earners was less than the corresponding rates in the two

branches showing increases; and in value of products this branch shows a smaller rate of increase than appears for the manufacture of pickles, preserves, and sauces. The apparent decreases shown for the canning of oysters are due to the large quantities canned by establishments assigned to other classifications.

Table 3

ESTABLISHMENTS ENGAGED PRIMARILY IN CANNING AND PRESERVING—

	FRUITS AND VEGETABLES.			FISH.			OYSTERS.			PICKLES, PRESERVES, AND SAUCES.		
	1914	1904	Per cent of increase.	1914	1904	Per cent of increase. ¹	1914	1904	Per cent of increase. ¹	1914	1904	Per cent of increase. ¹
Number of establishments.....	3,153	2,261	39.5	330	310	6.5	65	69	-5.8	672	528	27.3
Persons engaged.....	59,329	45,088	29.4	10,306	6,092	69.2	2,296	3,570	-35.7	17,138	11,272	52.0
Proprietors and firm members.....	3,520	2,447	43.8	263	328	-19.8	60	93	-35.5	566	552	-2.7
Salaried employees.....	4,484	2,653	69.0	974	610	59.7	149	186	-19.9	3,982	2,179	82.7
Wage earners (average number).....	50,325	39,988	25.9	9,069	5,154	76.0	2,087	3,291	-36.6	12,590	8,511	47.9
Primary horsepower.....	88,303	44,499	98.4	10,966	4,877	125.1	1,895	1,232	53.8	18,840	10,223	84.3
Capital.....	\$98,738,219	\$47,629,407	107.3	\$28,463,738	\$9,577,280	197.2	\$2,076,607	\$2,599,563	-20.1	\$43,196,381	\$19,439,540	122.2
Salaries and wages.....	22,412,200	12,670,309	76.9	4,948,991	2,873,191	72.2	552,063	668,776	-17.5	10,754,934	5,354,780	100.8
Salaries.....	5,106,787	2,241,788	127.8	1,269,992	681,532	118.4	128,366	120,867	6.2	4,966,109	2,296,517	117.2
Wages.....	17,305,503	10,428,521	65.9	3,678,999	2,231,659	60.5	423,697	547,909	-22.7	5,788,825	3,068,263	88.7
Cost of materials.....	422,514	120,673	250.1	322,347	214,901	50.0	8,669	10,053	-13.8	86,869	12,452	545.9
Paid for contract work.....	878,158	336,127	159.8	375,964	130,031	187.6	18,726	21,959	-14.7	628,198	287,586	117.7
Rent and taxes (including interest).....	103,293,044	51,582,460	100.2	19,467,153	12,339,146	57.8	1,225,206	2,500,872	-52.7	25,672,506	16,834,858	114.4
Value of products.....	149,175,866	78,142,022	90.9	31,111,409	18,641,428	66.9	2,238,053	3,986,239	-43.9	60,914,532	29,696,287	105.1
Value added by manufacture (value of products less cost of materials).....	45,882,821	28,559,562	72.8	11,644,256	6,302,282	84.8	1,012,847	1,395,367	-27.4	25,242,026	13,061,429	93.3

¹A minus sign (-) denotes decrease.²Exclusive of internal revenue.

Summary, by states.—Table 4 summarizes the more important statistics of the combined industry, by states, the states being arranged according to the value of products reported for 1914. The table also gives the

rank of the states in 1914 and 1909 in respect to the several items, together with percentages of increase or decrease for the three five-year periods between 1899 and 1914.

Table 4

CANNING AND PRESERVING—ALL BRANCHES COMBINED.

PER CENT OF INCREASE.¹

STATE.	Number of establishments.	Wage earners.			Value of products.			Value added by manufacture.			PER CENT OF INCREASE. ¹								
		Average number.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	Wage earners (average number).			Value of products.			Value added by manufacture.		
											1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904
United States	4,220	74,071	100.0		\$243,439,850	100.0		\$83,781,950	100.0		23.5	5.3	-0.1	54.4	20.4	31.3	51.6	16.8	22.7
California.....	289	12,756	17.2	1	61,162,849	25.1	1	15,468,512	18.5	1	64.1	0.2	-5.6	87.5	26.2	74.6	73.7	19.9	54.9
New York.....	987	8,757	11.8	2	25,944,634	10.7	2	9,987,274	11.9	2	23.8	-9.2	22.1	36.3	13.2	34.5	35.5	5.4	46.6
Maryland.....	465	8,640	11.7	3	18,028,779	7.4	3	5,071,225	6.1	5	.....	-5.8	-0.8	31.5	6.0	11.0	40.1	-3.8	-3.7
Pennsylvania.....	84	3,096	4.2	7	14,949,551	6.1	4	7,410,126	8.9	3	12.5	.....	.....	57.6	.....	.....	53.8	.....	.....
Indiana.....	141	4,422	6.0	4	13,866,383	5.7	5	5,048,150	6.0	6	29.8	-0.6	59.2	58.3	48.6	87.4	79.4	21.2	89.5
New Jersey.....	96	3,154	4.3	6	13,764,955	5.6	6	5,730,429	6.8	4	73.5	.....	.....	275.7	.....	.....	293.5	.....	.....
Maine.....	194	3,913	5.3	5	10,742,738	4.4	7	3,338,824	4.0	9	1.6	10.4	-40.3	39.3	5.8	17.8	30.2	-15.3	8.5
Illinois.....	117	2,560	3.5	9	10,121,497	4.2	8	3,441,082	4.1	8	7.4	11.0	1.2	32.8	8.2	20.1	22.6	2.9	29.0
Washington.....	86	2,352	3.2	12	9,449,549	3.9	9	4,170,738	5.0	7	15.9	194.5	-60.8	-1.5	165.3	-28.9	-8.3	259.3	-31.6
Ohio.....	136	2,509	3.4	10	8,957,883	3.7	10	3,055,834	3.6	11	24.9	-6.3	9.3	92.2	3.3	38.3	95.1	-13.0	36.0
Michigan.....	91	2,507	3.4	11	8,194,225	3.4	11	3,301,640	3.9	10	20.9	2.5	44.4	64.8	30.2	43.7	74.1	31.5	72.6
Massachusetts.....	65	1,903	2.6	14	8,169,014	3.4	12	2,563,273	3.1	13	31.3	8.0	-23.1	19.4	4.0	3.8	13.5	28.3	1.4
Wisconsin.....	112	2,687	3.6	8	7,335,338	3.0	13	2,765,051	3.3	12	51.8	35.5	70.3	52.6	46.1	142.2	50.0	43.9	94.7
Oregon.....	71	799	1.1	20	4,738,067	1.9	14	1,647,647	2.0	15	.....	.....	.....	47.7	.....	.....	61.6	.....	.....
Iowa.....	64	1,209	1.7	16	3,919,955	1.6	15	1,797,930	2.1	14	-3.0	-22.4	57.4	53.7	-30.6	73.3	32.9	-37.0	65.6
Delaware.....	97	1,803	2.4	15	3,174,821	1.3	16	922,687	1.1	16	31.7	37.0	.....	50.8	44.6	.....	67.0	-30.1	.....
Utah.....	37	877	0.9	22	2,429,804	1.0	17	700,493	0.9	19	70.9	.....	.....	129.3	.....	.....	121.0	.....	.....
Kentucky.....	33	594	0.8	23	2,265,958	0.9	18	899,197	1.1	17	-0.4	25.6	5.5	22.0	69.4	114.1	17.9	95.9	68.8
Virginia.....	441	2,074	2.9	13	2,234,408	1.0	19	66,112	0.8	22	11.5	73.7	.....	20.5	52.2	.....	2.3	51.3	.....
Colorado.....	26	684	0.9	21	1,798,129	0.7	20	708,465	0.8	20	32.0	64.4	32.9	17.7	86.1	102.2	-17.2	118.4	151.3
Mississippi.....	18	1,052	1.4	17	1,654,772	0.7	21	777,577	0.9	18	24.2	11.9	.....	100.7	-45.3	.....	145.7	-33.3	.....
Louisiana.....	28	991	1.3	18	1,365,267	0.6	22	702,741	0.8	21	1.7	58.6	54.3	44.1	-16.6	174.7	73.7	-24.6	206.9
Minnesota.....	35	436	0.6	27	1,284,340	0.5	23	478,288	0.6	24	.....	.....	.....	-4.6	.....	.....	6.7	.....	.....
Texas.....	22	213	0.3	32	1,210,969	0.5	24	590,630	0.7	22	34.8	32.8	.....	143.1	50.0	.....	95.1	139.5	.....
Missouri.....	153	850	1.1	19	1,081,590	0.4	25	341,018	0.4	25	-10.7	25.6	.....	-31.2	19.0	.....	-39.9	20.0	.....

¹ Percentages are based on figures in Table 24. A minus sign (-) denotes decrease. Percentages are omitted where base is less than 100 for wage earners or less than \$100,000 for value of products or value added by manufacture, or where comparable figures can not be given.

Table 4—Con.

Table 1—Con.		CANNING AND PRESERVING—ALL BRANCHES COMBINED.												PER CENT OF INCREASE. ¹								
STATE.	Number of establishments	Wage earners.			Value of products.			Value added by manufacture.			Wage earners (average number).			Value of products.			Value added by manufacture.					
		Average number.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904			
																				1914	1909	1914	1909	1914	1909
Nebraska.....	17	244	0.3	30	\$590,162	0.2	26	\$198,586	0.2	27	26	13.5	.....	.....	.....	.....	.....	.....	.....	.....
Arkansas.....	63	454	0.6	25	579,209	0.2	27	232,684	0.3	26	35	55.5	.....	107.7	.....	.....	.....	.....	.....	-6.0
Tennessee.....	62	381	0.5	28	496,225	0.2	28	135,279	0.2	34	36	25.7	49.3	75.0	140.8	-14.9	.....	.....	.....	79.4
Georgia.....	17	447	0.6	26	445,589	0.2	29	184,069	0.2	28	31	4.4	.....	38.7	.....	.....	.....	.....	.....	49.7
Florida.....	21	194	0.3	33	417,921	0.2	30	178,477	0.2	29	30	3.2	2.3	20.3	95.9	20.1	51.4	.....	.....	33.6
Vermont.....	6	95	0.1	35	402,330	0.2	31	174,594	0.2	30	33	-19.5	.....	-55.5	21.8	168.3	-40.6	.....	.....	50.3
Kansas.....	5	71	0.1	36	393,127	0.2	32	95,064	0.1	35	34	-40.8	.....	37.7	.....	.....	.....	.....	.....	-5.3
South Carolina.....	18	485	0.6	24	363,567	0.1	33	154,356	0.2	33	29	3.8	-55.3	.....	14.2	-44.6	.....	.....	.....	-3.2
Connecticut.....	15	147	0.2	34	358,001	0.1	34	155,471	0.2	32	28	14.8	-0.8	-3.0	3.7	92.2	.....	.....	.....	-8.9
West Virginia.....	29	216	0.3	31	351,493	0.1	35	87,762	0.1	36	27	-20.3	-17.1	-42.1	-41.9	-20.8	-1.3	.....	.....	-49.8
North Carolina.....	27	351	0.5	29	346,886	0.1	36	172,331	0.2	31	37	86.7	-5.5	.....	141.5	-35.1	.....	.....	.....	-53.6
Idaho.....	5	70	0.1	37	125,623	0.1	37	66,573	0.1	37	.....	.....	.....	.....	.....	.....	.....	.....	.....	150.8
All other states.....	47	278	0.3	.....	723,651	0.3	.....	316,251	0.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

¹ Percentages are based on figures in Table 24. A minus sign (—) denotes decrease. Percentages are omitted where base is less than 100 for wage earners or less than \$100,000 for value of products or value added by manufacturer, or where comparable figures can not be given.

The industry is well distributed throughout the United States, having been reported for 1914 by 46 states and the District of Columbia. Nevada and Wyoming are the only states not represented by one or more establishments.

California, by far the most important state in the industry, largely because of its fruit products, ranked first at the censuses of 1914, 1909, and 1904 in value of products and value added by manufacture, and first in 1914, second in 1909, and third in 1904 in average number of wage earners.

In the case of a number of the states changes in rank as to value of products took place between 1909 and 1914, the most important of which were those shown for New Jersey and Washington. The former state advanced from thirteenth to sixth place during the period in question, while Washington dropped from fourth to ninth. Fortheremainderof the leading states, (those having a product of over \$3,000,000), either no changes occurred or the changes were much less pronounced. It appears, therefore, that the geographic distribution of the industry in 1914 was not greatly different from that in 1909.

The highest rates of growth during the five-year period 1909-1914 in value of products and value added by manufacture—275.7 per cent and 293.5 per cent, respectively—appear for New Jersey, and this state also shows a greater percentage of increase (73.5) in average number of wage earners than any other important state in the industry. In four of the states for which separate figures are given in the table—namely, Minnesota, Missouri, Washington, and West Virginia—the value of products decreased between 1909 and 1914.

Persons engaged in the industry.—Table 5 shows, for 1914 and 1909, the number of persons engaged in the industry as a whole and in each of its branches, distributed by sex, the average number of wage earners being distributed also by age.

Table 5

INDUSTRY AND CLASS.	Census year.	PERSONS ENGAGED IN THE INDUSTRY.				
		Total.	Male.	Female.	Per cent of total.	
					Male.	Female.
CANNING AND PRESERVING.....	1914	88,069	48,180	39,889	54.7	45.3
	1909	71,972	38,437	33,535	53.4	46.6
Proprietors and officials.....	1914	7,540	7,368	172	97.7	2.3
	1909	6,920	6,759	161	97.7	2.3
Proprietors and firm members....	1914	4,409	4,285	124	97.2	2.8
	1909	4,244	4,116	128	97.0	3.0
Salaried officers of corporations....	1914	1,207	1,182	25	97.9	2.1
	1909	968	951	17	98.2	1.8
Superintendents and managers....	1914	1,924	1,901	23	98.8	1.2
	1909	1,708	1,692	16	99.1	0.9
Clerks and other subordinate salaried employees.	1914	6,453	5,096	1,357	78.9	21.1
	1909	5,084	4,028	1,056	79.2	20.8
Wage earners (average number)....	1914	74,071	35,716	38,355	48.2	51.8
	1909	59,968	27,650	32,318	46.1	53.9
16 years of age and over.....	1914	71,128	34,577	36,551	48.6	51.4
	1909	55,722	25,865	29,857	46.4	53.6
Under 16 years of age.....	1914	2,943	1,139	1,804	38.7	61.3
	1909	4,246	1,785	2,461	42.0	58.0
FRUITS AND VEGETABLES.....	1914	58,329	29,836	28,493	51.2	48.8
	1909	47,448	23,496	23,952	49.5	50.5
Proprietors and officials.....	1914	5,527	5,450	77	98.6	1.4
	1909	5,110	5,014	96	98.1	1.9
Proprietors and firm members....	1914	3,520	3,468	52	98.5	1.5
	1909	3,318	3,239	77	97.7	2.3
Salaried officers of corporations....	1914	700	688	12	98.3	1.7
	1909	607	599	8	98.7	1.3
Superintendents and managers....	1914	1,307	1,294	13	99.0	1.0
	1909	1,187	1,176	11	99.1	0.9
Clerks and other subordinate salaried employees.	1914	2,477	1,903	574	76.8	23.2
	1909	1,846	1,434	412	77.7	22.3
Wage earners (average number)....	1914	50,325	22,483	27,842	44.7	55.3
	1909	40,492	17,048	23,444	42.1	57.9
16 years of age and over.....	1914	47,839	21,533	26,306	45.0	55.0
	1909	36,908	15,565	21,343	42.2	57.8
Under 16 years of age.....	1914	2,486	950	1,536	38.2	61.8
	1909	3,584	1,483	2,101	41.4	58.6
FISH.....	1914	10,306	6,753	3,553	65.5	34.5
	1909	8,341	5,314	3,027	63.7	36.3
Proprietors and officials.....	1914	651	644	7	98.9	1.1
	1909	651	642	9	98.6	1.4
Proprietors and firm members....	1914	263	258	5	98.1	1.9
	1909	338	331	7	97.9	2.1
Salaried officers of corporations....	1914	163	162	1	99.4	0.6
	1909	127	125	2	98.4	1.6
Superintendents and managers....	1914	225	224	1	99.6	0.4
	1909	186	186	.....	100.0	.....
Clerks and other subordinate salaried employees.	1914	586	434	152	74.1	25.9
	1909	430	299	131	69.5	30.5
Wage earners (average number)....	1914	9,069	5,675	3,394	62.6	37.4
	1909	7,280	4,373	2,887	60.2	39.8
16 years of age and over.....	1914	8,902	5,574	3,328	62.6	37.4
	1909	7,085	4,277	2,808	60.4	39.6
Under 16 years of age.....	1914	167	101	66	60.5	39.5
	1909	175	96	79	54.9	45.1

CANNING AND PRESERVING—VALUE OF PRODUCTS, FOR LEADING STATES: 1914, 1909, 1904, AND 1899.

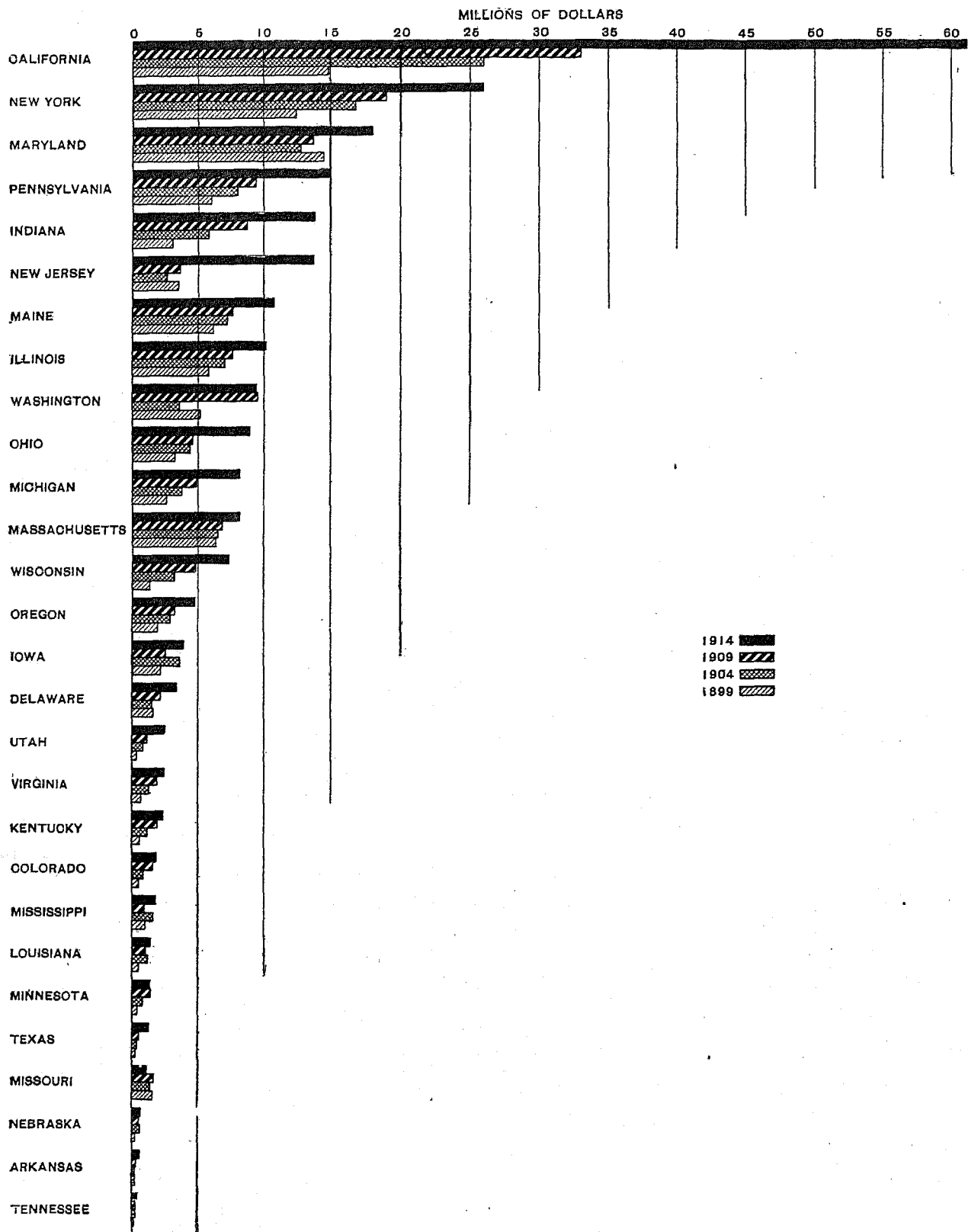


Table 7 presents for 1914 and 1909 for the United States as a whole, and for 36 states separately, the average number of wage earners employed and their per cent distribution as males 16 years of age and over, females 16 years of age and over, and children under 16 years of age.

STATE.	Census year.	WAGE EARNERS.			
		Average number.	Per cent of total.		
			16 years of age and over.		Under 16 years of age.
			Male.	Female.	
United States.....	1914	74,071	45.1	50.5	4.4
	1909	59,908	43.1	49.8	7.1
Arkansas.....	1914	454	31.0	60.6	8.4
	1909	292	33.6	58.2	8.2
California.....	1914	12,756	39.7	60.6	5.4
	1909	7,757	41.4	56.3	2.2
Colorado.....	1914	684	51.2	48.1	0.7
	1909	518	33.2	66.0	0.8
Connecticut.....	1914	147	51.7	47.6	0.7
	1909	128	46.9	53.1	.....
Delaware.....	1914	1,803	33.7	59.2	7.0
	1909	1,369	32.5	53.3	14.2
Florida.....	1914	194	54.6	36.1	9.3
	1909	188	47.9	45.2	6.9
Georgia.....	1914	447	36.9	55.3	7.8
	1909	428	39.5	49.3	11.2
Illinois.....	1914	2,560	64.8	34.3	0.9
	1909	2,383	48.6	48.1	3.3
Indiana.....	1914	4,422	47.2	51.2	1.6
	1909	3,406	42.7	54.2	3.1
Iowa.....	1914	1,209	56.1	41.7	2.2
	1909	1,247	55.6	38.7	5.7
Kansas.....	1914	71	53.7	46.3	.....
	1909	120	43.3	39.2	17.5
Kentucky.....	1914	594	52.0	47.5	0.5
	1909	653	38.6	57.3	4.1
Louisiana.....	1914	991	34.0	65.2	0.8
	1909	974	41.3	50.6	8.1
Maine.....	1914	3,913	57.6	39.6	2.8
	1909	3,850	55.8	42.9	1.4
Maryland.....	1914	8,640	35.9	57.9	6.2
	1909	8,613	34.6	51.8	13.5
Massachusetts.....	1914	1,903	74.8	22.7	2.5
	1909	1,449	72.9	25.6	1.5
Michigan.....	1914	2,507	43.6	55.5	0.9
	1909	2,073	47.1	51.1	1.8
Minnesota.....	1914	436	60.6	38.5	0.9
	1909	415	51.6	39.3	9.1
Mississippi.....	1914	1,052	38.6	55.4	6.0
	1909	847	40.1	38.3	21.6
Missouri.....	1914	850	30.7	63.9	5.4
	1909	952	29.6	53.4	16.9
Nebraska.....	1914	244	59.4	39.7	0.9
	1909	215	58.6	31.6	9.8
New Jersey.....	1914	3,154	47.6	51.9	0.5
	1909	1,818	38.8	60.8	0.4
New York.....	1914	8,757	44.1	53.3	0.6
	1909	7,075	43.8	55.2	1.0
North Carolina.....	1914	351	63.0	30.2	6.8
	1909	188	31.9	47.9	20.2

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Table 7—Continued.

STATE.	Census year.	Average number.	WAGE EARNERS.		
			Per cent of total.		
			16 years of age and over.		Under 16 years of age.
			Male.	Female.	
Ohio.....	1914	2,509	58.1	41.3	0.6
	1909	2,009	45.5	52.9	1.6
Oregon.....	1914	799	49.7	48.3	2.0
	1909	661	61.0	35.6	3.5
Pennsylvania.....	1914	3,096	46.1	48.3	5.6
	1909	2,753	51.5	44.7	3.8
South Carolina.....	1914	485	41.7	48.6	9.7
	1909	467	34.3	51.0	14.8
Tennessee.....	1914	381	29.4	63.1	7.5
	1909	303	30.4	55.1	14.5
Texas.....	1914	213	54.9	43.7	1.4
	1909	158	36.7	55.7	7.6
Utah.....	1914	677	35.2	53.0	11.8
	1909	396	39.1	55.3	5.6
Vermont.....	1914	95	63.9	35.3	0.7
	1909	118	70.3	17.8	11.9
Virginia.....	1914	2,074	31.6	52.4	16.0
	1909	1,860	29.1	49.1	21.7
Washington.....	1914	2,352	73.4	24.6	2.0
	1909	2,029	75.1	23.5	1.4
West Virginia.....	1914	216	25.0	61.1	13.9
	1909	271	23.2	50.5	26.2
Wisconsin.....	1914	2,687	69.7	25.7	4.6
	1909	1,776	68.0	28.8	3.2

For the United States as a whole the proportion of male wage earners 16 years of age and over for 1914 shows a slight increase over 1909; the proportion of females is practically the same for the two years, while the proportion of children under 16 employed as wage earners shows a decrease.

Of the 36 states for which separate figures are given, 24 show an increase from 1909 to 1914 in the proportion of males, 19 an increase in the proportion of females, and only 11 an increase in proportion of children under 16 years of age. California, New York, and Maryland are the states in which the largest number of wage earners are employed, but Massachusetts, Washington, and Wisconsin report the largest proportion of men and Louisiana and Missouri the largest percentage of women wage earners.

Wage earners employed, by months.—The following table gives, for the industry as a whole, the total number of wage earners employed on the 15th of each month, or the nearest representative day, for 1914 and 1909, and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

Table 8

MONTH.	WAGE EARNERS IN THE INDUSTRY.					
	Number. ¹			Per cent of maximum.		
	1914	1909	1904	1914	1909	1904
January.....	27,917	19,998	19,614	15.0	12.9	12.5
February.....	28,944	21,268	18,995	15.6	13.7	12.1
March.....	29,926	23,015	20,212	16.1	14.9	12.9
April.....	34,047	28,390	25,880	18.3	18.3	16.5
May.....	38,458	31,139	30,726	20.7	20.1	19.6
June.....	58,869	45,270	49,936	31.7	29.2	29.9
July.....	89,183	68,516	66,247	48.0	44.3	42.2
August.....	143,042	127,741	124,384	77.0	82.5	79.2
September.....	185,724	154,800	157,030	100.0	100.0	100.0
October.....	141,670	105,257	112,067	76.3	68.0	71.4
November.....	69,628	59,727	52,804	37.5	38.6	33.6
December.....	41,446	34,536	30,093	22.3	22.3	19.2

¹ The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

Because of the seasonal character of this industry, the fluctuation of employment is very great, the minimum number of wage earners reported for 1914 representing 15 per cent of the maximum. The maximum employment during each census year occurred in September, and the number employed during the three months of August, September, and October was far greater than during any other period of the year. The minimum in both 1914 and 1909 was reported for January, and in 1904 for February.

Table 9 gives the total average number of wage earners employed during 1914, together with the total number employed on the 15th of each month, or the nearest representative day, for each state in which the average number of wage earners was 500 or more in 1914.

Table 9

[Month of maximum employment for each state is indicated by boldface figures and that of minimum by <i>italic</i> figures.]														
STATE.	Average number employed during year.	Number employed on 15th day of the month or nearest representative day.												Per cent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
United States.....	74,071	27,917	28,944	29,926	34,047	38,458	58,869	89,183	143,042	185,724	141,670	69,626	41,446	15.0
California.....	12,756	4,137	4,156	4,224	5,307	7,786	10,875	22,948	27,073	26,088	21,833	11,097	7,548	15.3
Colorado.....	684	171	176	207	230	263	480	1,575	1,645	1,519	1,083	550	299	10.4
Delaware.....	1,803	240	157	157	173	187	1,144	308	4,539	8,988	4,863	687	253	1.4
Illinois.....	2,560	1,870	1,897	1,480	1,475	1,732	3,044	2,712	4,703	5,785	3,652	1,997	1,453	23.6
Indiana.....	4,422	1,801	1,531	1,843	2,050	2,077	3,907	2,783	6,518	13,440	11,170	3,926	2,018	11.4
Iowa.....	1,309	377	345	344	357	409	452	587	4,779	4,282	1,536	651	339	7.2
Kentucky.....	594	241	273	262	269	298	315	502	984	1,541	1,527	540	378	15.6
Louisiana.....	991	757	1,270	1,306	1,387	530	369	754	1,187	1,179	1,455	1,004	694	25.4
Maine.....	3,913	887	822	992	1,505	3,293	3,475	4,122	5,778	11,762	8,072	4,932	1,316	7.0
Maryland.....	8,640	2,064	2,226	2,029	2,956	4,150	5,754	4,601	21,197	31,347	19,516	4,680	3,060	6.5
Massachusetts.....	1,933	1,794	1,930	1,777	1,735	1,638	1,919	1,923	1,909	2,023	2,150	2,123	1,915	76.2
Michigan.....	2,507	1,063	965	992	1,088	1,278	2,338	4,321	4,629	5,323	4,199	2,498	1,442	18.1
Mississippi.....	1,052	1,061	1,077	1,214	1,194	309	124	239	1,311	1,542	1,799	1,495	1,259	6.9
Missouri.....	850	68	69	71	71	73	75	86	2,584	3,669	3,028	343	63	1.7
New Jersey.....	3,154	1,592	1,643	1,731	1,880	1,846	2,629	2,422	4,109	8,092	6,688	3,429	1,787	19.7
New York.....	8,757	2,748	2,511	2,678	2,806	3,088	6,066	13,793	14,458	15,547	18,768	14,863	7,728	13.5
Ohio.....	2,509	1,023	993	1,083	1,079	1,339	2,226	1,863	4,765	7,739	4,829	1,989	1,180	12.8
Oregon.....	799	350	417	246	315	497	1,191	1,255	1,128	1,380	1,495	894	420	16.5
Pennsylvania.....	3,096	2,203	2,594	2,504	2,545	2,355	2,662	3,224	4,482	4,848	4,054	3,086	2,595	45.4
Utah.....	677	97	97	127	148	176	582	1,556	1,277	2,286	1,433	233	112	4.2
Virginia.....	2,074	79	84	164	752	672	505	908	5,439	8,907	6,293	806	279	0.9
Washington.....	2,352	617	809	1,157	1,611	2,165	3,090	4,054	4,271	3,830	3,438	2,194	1,088	12.1
Wisconsin.....	2,687	673	699	756	814	1,043	3,418	9,124	6,086	5,383	2,189	1,194	865	7.4

The fluctuation of employment from month to month in the industry as a whole is very great, due to the seasonal character of the industry. The maximum activity naturally occurs in the three months from August to October, inclusive, during which period the bulk of the season's crop of fruits and vegetables comes into the market.

September was the month of maximum employment in 13 of the 23 states for which figures are given in the table, October in 5 and August in 4.

Prevailing hours of labor.—In Table 10 the average number of wage earners reported for 1914 and 1909 for the combined industry have been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. The number employed in each establishment was classified as a total, even though a few employees worked a greater or a smaller number of hours. Separate figures are presented for each of the 23 states in which an average of 500 or more wage earners were employed during 1914.

In the United States as a whole, 47.4 per cent of the wage earners in the industry in 1914 worked in

establishments where the prevailing hours were 60 per week, 48.8 per cent where the prevailing hours were less than 60 per week, and 3.8 per cent where the prevailing hours were more than 60 per week. The corresponding percentages for 1909 were 71.6, 19.4, and 9, respectively.

In 12 of the 23 states for which figures are given in the table, the largest group of wage earners was that reported for establishments whose prevailing hours were 60; in four states—Colorado, Massachusetts, New York, and Oregon—the largest group was reported for the 54-hour establishments; in four states—Indiana, Kentucky, New Jersey, and Pennsylvania—for the establishments whose prevailing hours were between 54 and 60; and in three states—Louisiana, Mississippi, and Missouri—for those operating 48 hours and under.

The most marked change between 1909 and 1914 is shown for Louisiana, in which state 96 per cent of the wage earners in the earlier year were employed in establishments whose prevailing hours were 60 or more, whereas in the later year 80.2 per cent were reported by establishments operating 48 hours and under.

Table 10		AVERAGE NUMBER OF WAGE EARNERS.								
STATE.	Cen- sus year.	Total.	In establishments where the prevailing hours of labor per week were—							
			48 and under	Be- tween 48 and 54.	54.	Be- tween 54 and 60.	60.	Be- tween 60 and 72.	72.	Over 72.
United States	1914	74,071	7,854	2,844	14,984	10,467	35,141	2,141	394	246
	1909	59,968	2,632	1,311	3,077	4,641	42,908	2,904		2,495
California.....	1914	12,756	1,336	307	3,094	206	7,144	580	8	81
	1909	7,757	332	53	428	147	6,083	514		200
Colorado.....	1914	684	84	79	389	9	79	44		
	1909	518	48		24	3	436	7		
Delaware.....	1914	1,803	166	91	256	268	993	29		
	1909	1,369	45	10	12	42	1,097	133		30
Illinois.....	1914	2,560	21	111	205	980	1,238	5		
	1909	2,383	61	153	74	276	1,672			147
Indiana.....	1914	4,422	262	188	302	1,685	1,576	399	10	
	1909	3,406	211	55	39	616	2,485			
Iowa.....	1914	1,209	79	38	18	22	858	68	126	
	1909	1,247	69		11	4	1,061			102
Kentucky.....	1914	594	74	7	175	185	148	5		
	1909	653	58		67	95	419	14		
Louisiana.....	1914	991	795		3		186	2	5	
	1909	974	24		13	2	517	317		101
Maine.....	1914	3,913	150	65	499	50	3,142	1		
	1909	3,850	10		123	79	3,617	4		17
Maryland.....	1914	8,640	1,385	272	142	568	5,668	494	81	30
	1909	8,613	223	317	90	126	6,192	616		1,049
Massachusetts..	1914	1,903	58	200	1,513	115	19			
	1909	1,449	66	94	1,103	154	32			

		AVERAGE NUMBER OF WAGE EARNERS.								
STATE.	Cen- sus year.	Total.	In establishments where the prevailing hours of labor per week were—							
			48 and under	Be- tween 48 and 54.	54.	Be- tween 54 and 60.	60.	Be- tween 60 and 72.	72.	Over 72.
Michigan.....	1914	2,507	395	11	607	384	1,081	29		
	1909	2,073	6		58	373	1,589	15		32
Mississippi.....	1914	1,052	496		88	45	423			
	1909	847	11		125	32	581	98		
Missouri.....	1914	850	396	22	78	12	337	5		
	1909	952	217	23	23	30	651	8		
New Jersey.....	1914	3,154	221	177	203	1,485	1,064	4		
	1909	1,818	149	82	97	485	988	10		7
New York.....	1914	8,757	249	261	3,669	931	3,611	36		
	1909	7,075	381	279	191	735	5,269	156		64
Ohio.....	1914	2,509	92	86	870	345	1,094	5		17
	1909	2,009	208	18	79	149	1,555			
Oregon.....	1914	799	59	32	477	23	141	64		3
	1909	661	15	28	134		280	172		32
Pennsylvania..	1914	3,096	114	86	613	1,841	351	2	9	80
	1909	2,753	9	7	23	832	1,806	73		3
Utah.....	1914	677	72	21	156	35	393			
	1909	396	85		77	33	192		9	
Virginia.....	1914	2,074	445	126	65	418	987	27	5	1
	1909	1,800	80	82	34	43	1,542	19		60
Washington....	1914	2,352	150	21	630		1,311	234	6	
	1909	2,029	101		24	58	1,359	469		18
Wisconsin.....	1914	2,687	109	207	421	442	1,311	51	131	15
	1909	1,776		47	13	125	1,051	217		323

Character of ownership.—Table 11 presents statistics concerning the character of ownership, or legal organization, of establishments in the canning and pre-

serving industry for 1914 and 1909 for the United States, and for 1914 only for such states as reported an average of 500 wage earners or more.

Table 11

STATE.	NUMBER OF ESTABLISHMENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.									VALUE OF PRODUCTS.								
				Total.	In establishments owned by—			Per cent of total.			Total.	Of establishments owned by—			Per cent of total.			Total.	Indi-viduals.	Corpora-tions.	All oth-ers.
	Indi-vid-uals.	Cor-pora-tions.	All oth-ers.		Indi-vid-uals.	Cor-pora-tions.	All oth-ers.	Indi-vid-uals.	Cor-pora-tions.	All oth-ers.		Indi-vid-uals.	Corpora-tions.	All others.	Indi-vid-uals.	Corpora-tions.	All oth-ers.				
United States:																					
1914.....	1,905	1,322	993	74,071	11,549	53,473	9,049	15.6	72.2	12.2	\$243,439,859	\$26,390,525	\$195,058,337	\$21,960,997	10.9	80.1	9.0				
1909.....	1,636	1,167	964	59,968	10,571	39,847	9,550	17.6	66.4	15.9	157,101,201	21,321,533	116,496,603	19,283,065	13.6	74.2	12.2				
California.....	66	165	58	12,756	712	11,211	833	5.6	87.9	6.5	61,162,849	2,594,241	54,168,399	4,400,209	4.2	88.6	7.2				
Colorado.....	5	18	3	684	125	552	7	18.3	80.7	1.0	1,798,129	256,057	1,522,872	19,200	14.2	84.7	1.1				
Delaware.....	37	27	33	1,803	380	1,010	413	21.1	56.0	22.9	3,174,821	643,434	1,825,402	705,985	20.3	57.5	22.2				
Illinois.....	39	61	17	2,560	356	2,146	58	13.9	83.8	2.3	10,121,497	893,819	9,035,273	192,405	8.8	89.3	1.9				
Indiana.....	84	85	22	4,422	531	3,540	351	12.0	80.1	7.9	13,866,353	2,232,592	10,854,527	779,264	16.1	78.3	5.6				
Iowa.....	10	43	11	1,209	10	1,060	109	0.8	90.2	9.0	3,919,955	21,650	3,633,137	215,168	0.5	94.0	5.5				
Kentucky.....	11	16	6	594	63	502	29	10.6	84.5	4.9	2,265,958	50,395	2,195,539	20,024	2.2	96.9	0.9				
Louisiana.....	8	14	6	991	50	834	107	5.0	84.2	10.8	1,365,267	79,867	1,206,376	79,024	5.8	88.4	5.8				
Maine.....	66	70	58	3,913	468	2,986	459	12.0	76.3	11.7	10,742,738	1,098,537	8,505,480	1,138,721	10.2	79.2	10.6				
Maryland.....	259	61	145	8,640	2,400	3,852	2,388	27.8	44.6	27.6	18,028,779	4,299,967	9,269,890	4,458,922	23.9	51.4	24.7				
Massachusetts.....	27	27	11	1,903	211	1,537	155	11.1	80.8	8.1	8,169,014	803,401	6,702,116	663,497	9.8	82.1	8.1				
Michigan.....	33	43	15	2,507	312	2,070	125	12.4	82.6	5.0	8,194,225	814,978	7,074,230	305,017	10.0	86.3	3.7				
Mississippi.....	1	15	2	1,052		1,052		100.0			1,654,772		1,654,772		100.0						
Missouri.....	76	27	50	850	391	251	208	46.0	29.5	24.5	1,081,590	406,614	530,568	144,408	37.6	49.0	13.4				
New Jersey.....	42	39	15	3,154	492	2,482	180	15.6	78.7	5.7	13,764,955	1,449,676	11,949,447	365,447	10.5	86.8	2.7				
New York.....	677	129	181	8,757	1,796	5,992	969	20.5	68.4	11.1	25,944,634	4,284,482	19,120,521	2,539,631	16.5	73.7	9.8				
Ohio.....	37	71	28	2,509	537	1,587	385	21.4	63.3	15.3	8,957,883	1,981,966	5,924,414	1,051,503	22.1	66.1	11.7				
Oregon.....	18	42	11	799	70	652	77	8.8	81.6	9.6	4,738,067	168,466	4,083,334	486,267	3.5	86.2	10.3				
Pennsylvania.....	41	20	23	3,096	381	2,409	306	12.3	77.8	9.9	14,949,551	1,086,427	12,607,172	1,255,952	7.3	84.3	8.4				
Utah.....	4	32	1	677	5	672		0.7	99.3		2,429,804	2,429,804	2,421,696		0.3	99.7					
Virginia.....	222	40	179	2,074	835	494	745	40.3	23.8	35.9	2,234,408	806,957	630,208	797,243	36.1	28.2	35.7				
Washington.....	16	60	10	2,352	89	1,923	340	3.8	81.8	14.4	9,449,549	471,829	8,021,768	955,952	5.0	84.9	10.1				
Wisconsin.....	10	89	13	2,687	77	2,586	24	2.9	96.2	0.9	7,335,338	359,236	6,830,781	145,321	4.9	98.1	2.0				

¹ Includes the groups "individuals" and "all others."

² Includes the group "all others."

Of the entire number of establishments reported for the industry for 1914, 31.3 per cent were under corporate ownership, as against 31 per cent in 1909 and 29.7 per cent in 1904. The establishments under this form of ownership, however, although representing less than one-third of the total number at each census, reported 80.1 per cent of the total value of products for 1914, 74.2 per cent for 1909 and 60 per cent for 1904. Thus it will be seen that during the 10-year period 1904-1914 the proportion of the total value of products reported for the corporations increased from three-fifths to four-fifths, although only a slight increase took place in the proportion which the number of establishments under corporate ownership formed of the total.

Among the states, considerable variation is shown in the relative importance of the establishments operated under individual, corporation, and other forms of ownership, respectively. Thus, in California, the leading state in the industry, establishments under corporate ownership representing 57.1 per cent of the total number of establishments, gave employment to 87.9 per cent of the wage earners, and reported 88.6 per cent of the value of products; whereas for Maryland, on the other hand, the corresponding percentages were only 13.1, 44.6, and 51.4, respectively. This dif-

ference is due to the fact that the proportion of large establishments, most of which are under corporate control, is much greater in California than in Maryland. In fact, the former state, with less than two-thirds as many establishments, reported considerably more than three times as great a value of products as the latter.

Size of establishments.—The tendency of the industry to become concentrated in large establishments is indicated by the statistics given in Table 12.

Of the total number of establishments reported, only seven-tenths of 1 per cent in 1914 manufactured products valued at \$1,000,000 or over, as against three-tenths of 1 per cent in 1909. The proportions which the value of the products of these establishments formed of the total for the two years were very much greater—23.8 per cent and 14.9 per cent, respectively. The great increase between 1909 and 1914 in the proportion which the value of products of this group formed of the total was due mainly to the increase in the number of establishments, although the value per establishment increased somewhat. The establishments with products valued at \$100,000 or more but less than \$1,000,000 also show a slightly greater proportion of the total value of products for 1914 than for 1909. On the other hand, the three

groups of establishments with products valued at less than \$100,000 all show marked decreases in this respect, although the value of products for each group in 1914 was greater than in 1909.

Table 12 VALUE OF PRODUCT.	Cen- sus year.	Num- ber of estab- lish- ments.	Average num- ber of wage earners.	Value of products.	Value added by manufac- ture.
All classes.....	1914 1909	4,220 3,767	74,071 59,968	\$243,439,859 157,101,201	\$83,781,950 55,278,142
Less than \$5,000.....	1914 1909	1,626 1,394	3,255 3,185	3,195,667 3,105,206	1,435,493 1,232,832
\$5,000 to \$20,000.....	1914 1909	1,142 1,176	8,090 8,986	12,391,999 12,221,763	4,661,692 4,488,480
\$20,000 to \$100,000.....	1914 1909	937 840	18,345 17,700	42,783,417 36,858,716	14,843,174 13,364,834
\$100,000 to \$1,000,000.....	1914 1909	486 344	33,272 24,575	127,184,918 81,447,022	41,795,058 26,910,548
\$1,000,000 and over.....	1914 1909	29 13	11,109 5,522	57,883,858 23,468,494	21,046,533 9,281,448
Per cent distribution:					
Less than \$5,000.....	1914 1909	38.5 37.0	4.4 5.3	1.3 2.0	1.7 2.2
\$5,000 to \$20,000.....	1914 1909	27.1 31.2	10.9 15.0	5.1 7.8	5.6 8.1
\$20,000 to \$100,000.....	1914 1909	22.2 22.3	24.8 29.5	17.6 23.5	17.7 24.2
\$100,000 to \$1,000,000.....	1914 1909	11.5 9.1	44.9 41.0	52.2 51.8	49.9 48.7
\$1,000,000 and over.....	1914 1909	0.7 0.3	15.0 9.2	23.8 14.9	25.1 16.8

It will be noted that in the smaller and mediums ized establishments the number of wage earner-employed were much greater in proportion to the

value of products made than in the larger ones. Thus, the two groups of establishments with products valued at less than \$20,000 reported 15.3 per cent of the total average number of wage earners but only 6.4 per cent of the total value of products, and those with products valued at \$20,000 or more but less than \$100,000 reported 24.8 per cent of the wage earners but only 17.6 per cent of the value of products; whereas, on the other hand, the two groups of establishments with products valued at \$100,000 or more employed 59.9 per cent of the total average number of wage earners but turned out 76 per cent of the total products, as measured by value.

During the five-year period the average number of wage earners per establishment increased from 15.9 to 17.6; the average value of products per establishment, from \$41,705 to \$57,687; and the average value added by manufacture, from \$14,674 to \$19,854. The average value of products for the establishments handling principally fruits and vegetables increased from \$34,561 in 1904 to \$47,312 in 1914; for those handling fish and oysters, from \$59,704 in the earlier year to \$84,429 in the later; and for those making pickles, jellies, preserves, and sauces, from \$56,243 in 1904 to \$90,647 in 1914.

Table 13 shows the size of establishments in 1914 and 1909 as measured by the number of wage earners employed for the industry as a whole, and the 23 leading states.

Table 13		STATE.	Cen- sus year.	ESTABLISHMENTS EMPLOYING--																		
				TOTAL.		No wage earn- ers.	1 to 5 wage earn- ers.		6 to 20 wage earn- ers.		21 to 50 wage earn- ers.		51 to 100 wage earn- ers.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.	
Estab- lish- ments.	Wage earn- ers (aver- age num- ber).	Estab- lish- ments.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.		
United States	1914 1909	4,220 3,767	74,071 59,968	118 92	2,135 1,890	5,119 4,760	1,160 1,125	13,163 12,815	504 426	15,969 14,015	183 145	12,827 10,504	95 69	14,966 9,700	18 17	5,787 5,759	5 2	3,510 1,101	2 1	2,730 1,314		
California	1914 1909	289 196	12,756 7,757	13 4	64 37	183 96	80 58	994 701	61 51	2,010 1,798	39 29	2,819 2,069	27 13	4,295 1,918	3 4	882 1,175	2	1,573				
Colorado	1914 1909	26 30	684 518	1 2	9 13	30 38	7 8	51 105	3 3	99 107	5 4	392 268	1	112								
Delaware	1914 1909	97 77	1,803 1,369	1 1	23 8	79 28	49 49	565 626	19 15	563 467	2 4	122 248	3	474								
Illinois	1914 1909	117 118	2,560 2,383	6 10	51 46	142 140	23 29	262 322	20 19	641 664	13 9	964 710	4 5	551 547								
Indiana	1914 1909	141 134	4,422 3,406	2	32 29	82 99	59 58	739 643	29 33	948 1,039	12 11	818 756	3 2	442 375	4 1	1,393 494						
Iowa	1914 1909	64 71	1,209 1,247	6 4	11 17	33 52	30 30	388 402	14 18	438 623	1 1	63 52	2 118	287								
Kentucky	1914 1909	33 36	594 653	2	10 7	34 23	13 22	117 245	4 4	166 150	4 3	277 235										
Louisiana	1914 1909	28 26	991 974	1 2	11 9	36 26	3 6	33 68	5 2	146 79	6 4	397 352	2 3	379 449								
Maine	1914 1909	194 245	3,913 3,850	6 3	73 116	198 312	66 90	725 1,007	30 26	1,088 913	12 5	839 361	7 3	1,063 361	1	321	1	575				
Maryland	1914 1909	465 468	8,640 8,613	7 9	155 171	532 594	215 208	2,390 2,326	63 50	1,913 1,483	12 14	950 1,024	10 12	1,740 1,790	3 4	1,115 1,396						

Table 13—Con.

Table 13—Con.		ESTABLISHMENTS EMPLOYING—																		
STATE.	Cen- sus year.	TOTAL.		No wage earn- ers.	1 to 5 wage earn-ers.		6 to 20 wage earn-ers.		21 to 50 wage earn-ers.		51 to 100 wage earn-ers.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.	
		Estab- lish- ments.	Wage earn-ers (aver- age num- ber).		Estab- lish- ments.	Estab- lish- ments.	Wage earn-ers.	Estab- lish- ments.	Wage earn-ers.	Estab- lish- ments.	Wage earn-ers.	Estab- lish- ments.	Wage earn-ers.	Estab- lish- ments.	Wage earn-ers.	Estab- lish- ments.	Wage earn-ers.	Estab- lish- ments.	Wage earn-ers.	
Massachusetts.....	1914	65	1,903	3	27	84	20	231	9	271	4	263	.....	.....	1	293	1	761	.....	.....
	1909	71	1,449	5	35	85	17	217	10	330	2	136	1	188	1	493	.....	.....	.....	.....
Michigan.....	1914	91	2,507	8	34	78	25	319	14	446	5	339	2	267	3	1,058	.....	.....	.....	.....
	1909	104	2,073	4	57	156	20	279	13	425	4	273	5	605	1	335	.....	.....	.....	.....
Mississippi.....	1914	18	1,052	.....	1	5	5	70	5	142	3	232	4	603	.....	.....	.....	.....	.....	.....
	1909	11	847	.....	1	4	2	20	2	57	3	239	2	243	1	284	.....	.....	.....	.....
Missouri.....	1914	153	850	5	106	285	35	385	7	180	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1909	222	952	5	173	367	41	387	2	47	.....	.....	1	151	.....	.....	.....	.....	.....	.....
New Jersey.....	1914	96	3,154	2	37	94	30	354	17	550	4	247	4	554	1	281	.....	.....	1	1,074
	1909	84	1,818	.....	34	101	27	315	15	544	4	288	4	570	.....	.....	.....	.....	.....	.....
New York.....	1914	987	8,757	11	774	1,397	113	1,117	54	1,812	20	1,265	11	1,727	3	765	1	674	.....	.....
	1909	790	7,075	9	579	1,112	129	1,368	47	1,580	17	1,306	8	1,183	.....	.....	1	526	.....	.....
Ohio.....	1914	136	2,509	3	45	127	59	648	19	610	5	383	5	732	.....	.....	.....	.....	.....	.....
	1909	107	2,009	1	43	137	38	438	18	596	4	304	2	271	1	263	.....	.....	.....	.....
Oregon.....	1914	71	799	3	35	80	22	250	8	224	3	245	.....	.....	.....	.....	.....	.....	.....	.....
	1909	71	661	1	46	118	17	228	5	172	2	143	.....	.....	.....	.....	.....	.....	.....	.....
Pennsylvania.....	1914	84	3,096	4	35	98	25	258	12	406	5	316	2	362	.....	.....	.....	.....	1	1,656
	1909	83	2,753	4	44	119	20	203	7	263	4	277	2	308	1	269	.....	.....	1	1,314
Utah.....	1914	37	677	1	7	16	17	245	9	239	3	177	.....	.....	.....	.....	.....	.....	.....	.....
	1909	24	396	.....	5	18	13	144	6	234	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Virginia.....	1914	441	2,074	7	345	842	77	790	11	367	1	75	.....	.....	.....	.....	.....	.....	.....	.....
	1909	325	1,890	9	232	607	71	728	11	309	1	60	1	156	.....	.....	.....	.....	.....	.....
Washington.....	1914	88	2,352	1	26	89	31	368	19	582	5	330	3	481	.....	.....	1	502	.....	.....
	1909	80	2,020	2	22	70	35	444	15	484	4	302	.....	.....	2	729	.....	.....	.....	.....
Wisconsin.....	1914	112	2,687	5	22	46	44	557	28	849	10	669	3	566	.....	.....	.....	.....	.....	.....
	1909	83	1,776	4	16	41	36	484	18	583	7	441	2	227	.....	.....	.....	.....	.....	.....

It should be borne in mind in considering this table that, because of the seasonal character of the industry, the average number of wage earners for the entire year for any given establishment is usually much smaller than the maximum or even the average for the active period. (See Explanation of terms.) Moreover, the fact that some establishments operate during a much longer period than others affects the significance of the distribution according to the average number employed for the year.

Of the 4,220 establishments reported for 1914, there were 118, or 2.8 per cent, for which no wage earners are shown in the table. These were small establishments in which the work was done by the proprietors or firm members, sometimes assisted by members of their families or by persons classed as salaried employees. In some cases they employed a few wage earners for short periods, but the numbers were so small and the periods so short that the averages for the year, computed in the manner described in the "Explanation of terms," were nearer zero than

one, and therefore no wage earners could be shown. The establishments employing 1 to 5 wage earners represented 50.6 per cent of the total number of establishments in 1914 and reported 6.9 per cent of the total average number of wage earners. For those employing from 6 to 20, the corresponding percentages were 27.5 and 17.8, respectively; for those employing from 21 to 50, 11.9 and 21.6, respectively; for those employing from 51 to 100, 4.3 and 17.3, respectively; and for those employing more than 100, 2.8 and 36.4 per cent respectively.

For the United States as a whole, the average number of wage earners per establishment for 1914 was 17.6 as compared with 15.9 in 1909.

Engines and power.—Table 14 shows for 1914, 1909, and 1904, for the combined industry, the number and horsepower of engines or motors employed in generating power (including electric motors operated by purchased current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting.

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
				Amount.			Per cent distribution.		
	1914	1909	1904	1914	1909	1904	1914	1909	1904
Primary power, total.....	7,175	4,087	2,812	120,004	81,179	60,831	100.00	100.0	100.0
Owned.....	4,379	3,203	2,557	100,622	75,309	58,544	83.8	92.8	96.2
Steam engines and turbines ¹	3,201	2,587	2,292	90,778	70,392	56,122	75.6	86.7	92.3
Internal-combustion engines.....	1,137	595	242	8,967	4,519	1,962	7.5	5.6	3.2
Water wheels, turbines, and motors.....	41	21	23	877	398	460	0.7	0.5	0.8
Rented.....	2,796	884	255	19,382	5,870	2,287	16.2	7.2	3.8
Electric.....	2,796	884	255	18,726	5,469	1,776	15.6	6.7	2.9
Other.....				656	401	511	0.5	0.5	0.8
Electric.....	4,349	1,410	384	28,438	8,728	3,150	100.0	100.0	100.0
Rented.....	2,796	884	255	18,726	5,469	1,776	65.8	62.7	56.4
Generated by establishments reporting.....	1,553	526	129	9,712	3,259	1,374	34.2	37.3	43.6

¹ Figures for horsepower include, for 1909 and 1904, the amounts reported under the head of "Other" owned power.

The total primary power used in the industry nearly doubled between 1904 and 1914. Although the bulk of the primary power—more than three-fourths in 1914—is still derived from steam, and although the amount of this class of power increased considerably during each of the five-year periods covered by the table, the proportion which it represents of the total has decreased from census to census, the decrease being offset by increases in the use of internal-combustion engines and of rented electric power. During the 10-year period the horsepower reported for internal-combustion engines increased by 357 per cent, and that for rented electric power by 954.4 per cent, while the proportions which these two forms of power represented of the total grew from 3.2 per cent and 2.9 per cent, respectively, in 1904 to 7.5 per cent and 15.6 per cent, respectively, in 1914. The horsepower of electric motors operated by current generated in the same establishments has also increased greatly, although the rate of increase, 606.8 per cent, is not so great as that for motors driven by rented current.

For 1914 the largest amounts of power were reported for New York, Maryland, California, Wisconsin, Indiana, Ohio, Illinois, and Maine, in the order in which named, the total for these states being 74,272 horsepower, or 61.9 per cent of the aggregate for the United States. The greatest amount of power from internal-combustion engines, 3,007 horsepower, or 33.5 per cent of the total, was reported for New York. With the exceptions of Delaware, Montana, New Hampshire, Oklahoma, Tennessee, and North and South Carolina, rented electric power was in use in 1914 in all the states for which establishments engaged in the canning and preserving industry were reported. The states in which this kind of power was employed most extensively were California, New York, Illinois, Wisconsin, Indiana, and Washington. The total rented

electric power in use in these six states in 1914 amounted to 14,262 horsepower, or 76.2 per cent of the aggregate for the United States.

Fuel.—Table 15 shows, for 1914, the quantity of each kind of fuel used for which data were obtained, for the industry as a whole, and 23 separate states.

STATE.	COAL.		Coke (tons, 2,000 lbs.).	Oil, including gasoline (barrels).	Gas (1,000 cubic feet).
	Anthracite (tons, 2,240 lbs.).	Bituminous (tons, 2,000 lbs.).			
United States.....	48,705	415,732	2,992	344,764	224,543
California.....	140	389	.....	264,988	10,005
Colorado.....	.....	5,926	.....	56	382
Delaware.....	517	7,342	150	83	150
Illinois.....	156	26,854	66	315	1,848
Indiana.....	3	56,344	10	185	323
Iowa.....	215	11,625	.....	110	1,370
Kentucky.....	.....	9,382	.....	15	2,292
Louisiana.....	.....	4,196	.....	1,582	457
Maine.....	1,080	19,611	165	817	354
Maryland.....	1,157	36,932	20	324	9,525
Massachusetts.....	1,268	6,018	30	28	1,501
Michigan.....	416	22,597	238	432	229
Mississippi.....	.....	6,568	2	4	416
Missouri.....	3	1,486	49	66	11
New Jersey.....	2,528	24,332	.....	337	2,111
New York.....	37,297	48,367	1,091	2,190	34,374
Ohio.....	548	26,717	.....	98	88,399
Oregon.....	.....	60	.....	16,208	327
Pennsylvania.....	1,940	40,902	.....	62	54,465
Utah.....	.....	6,667	.....	21	.....
Virginia.....	365	5,966	57	137	.....
Washington.....	541	9,712	.....	54,975	2,013
Wisconsin.....	113	18,073	628	1,832	151
All other states.....	448	19,596	486	699	13,840

The bulk of the anthracite coal was reported from New York, where it was used mainly for evaporating apples. California reported more than three-fourths of the total quantity of the oil used, and most of the remainder was consumed in Washington and Oregon. The greatest quantity of gas—nearly two-fifths of the total—was used in the factories of Ohio; and the three states of Ohio, Pennsylvania, and New York reported almost four-fifths of the total.

SPECIAL STATISTICS RELATING TO PRODUCTS.

The special schedules used in collecting statistics for the canning and preserving industries called for a detailed report of the quantity and value of the various products, with the exception of pickles, preserves, and sauces. Since, as already stated, there is a considerable overlapping among the four branches of the industry, it has been deemed best in presenting data as to specific products not to segregate the branches, but to show the total quantity and value of each product made by all the establishments which produce that product, to whatever industries they may be assigned.

Sizes of cans and cases.—Table 16 shows the dimension and approximate capacity of the principal sizes of cans in use. These dimensions and capacities were obtained from the National Cannery Association and are those agreed upon by the conference committee of that association and the National Wholesale Grocers' Association as complying with the state and national pure-food laws. The volume and weight of contents given allow for "reasonable tolerances"—that is to say, they represent not the maximum capacity of the cans, but what they actually contain when filled in the usual manner. The figures relate to the "sanitary" (open-top) cans, which in some cases differ slightly in size from the "hole-and-cap" variety.

In Tables 17, 18, 19, 20, 22, and 23, the quantities of the several classes of canned products are given in standard cases of the capacities indicated in footnote 1, Table 16.

Table 16 SIZE, NUMBER, DIMENSIONS, AND APPROXIMATE CAPACITY OF CANS.					
SIZE, NO. ¹	Outside diameter or length and breadth.	Outside height.	Contents.		
			Kind.	Approximate volume.	Approximate weight.
	Inches.	Inches.		Cu. in.	Lbs. Oz.
$\frac{1}{2}$	$3\frac{1}{2}$ by $4\frac{5}{8}$	$2\frac{1}{2}$	Sardines.....	7	.. 3 $\frac{1}{2}$
$\frac{3}{4}$	$3\frac{1}{2}$	2	Tuna fish.....	14 $\frac{1}{2}$	.. 7
$\frac{1}{2}$	$3\frac{1}{2}$ by $4\frac{1}{2}$	$1\frac{1}{2}$	Sardines.....	21	.. 11
1.....	$2\frac{1}{2}$	4	Oysters and clams.....	19	.. 5
1.....	$2\frac{1}{2}$	4	Shrimp.....	19	.. 4 $\frac{1}{2}$
1-lb.—flat.....	4	$2\frac{1}{2}$	Tuna fish.....	25	.. 13
1-lb.—salmon.....	3	$4\frac{1}{2}$	Salmon.....	27	.. 15 $\frac{1}{2}$
1.....	$2\frac{1}{2}$	4	Soups.....	19	.. 10 $\frac{1}{2}$
1.....	$2\frac{1}{2}$	4	Fruits and vegetables.....	19	.. 10
2.....	$3\frac{1}{2}$	$4\frac{1}{2}$	Fruits and vegetables.....	37	1 4
2 $\frac{1}{2}$	4	$4\frac{1}{2}$	Fruits and vegetables.....	52	1 14
3 ($4\frac{1}{2}$ "").....	$4\frac{1}{2}$	$4\frac{1}{2}$	Fruits and vegetables.....	61	2 1
3 ($5\frac{1}{2}$ "").....	$4\frac{1}{2}$	5	Fruits and vegetables.....	63	2 2
3 ($5\frac{1}{2}$ "").....	$4\frac{1}{2}$	$5\frac{1}{2}$	Fruits and vegetables.....	69	2 6
10.....	$6\frac{1}{2}$	7	Fruits and vegetables.....	189	6 10

¹ In the compilation of tables 17, 18, 19, 20, 22, and 23 the quantities of the several classes of products have been reduced to standard cases of the following capacities: Sardines, No. $\frac{1}{2}$ cans, 48 to the case; tuna fish, No. $\frac{1}{2}$ cans, 48 to the case; salmon, shrimp, and oysters and clams, No. 1 cans, 48 to the case; soups, No. 1 cans, 48 to the case; clam chowder, No. 3 cans, 24 to the case; tomato pulp, No. 10 cans, 12 to the case; and all other fruits and vegetables, No. 2 or 3 cans, 24 to the case, as indicated in Table 19.

² Not including weight of liquid.

³ The fruits usually packed in the No. 2 $\frac{1}{2}$ cans and the tomato and other pulps usually packed in the No. 10 cans are slightly heavier in proportion to their volume than the average of the contents of the other sizes of cans.

THE UNITED STATES AS A WHOLE.

Table 17 presents a summary, by broad classes, of the quantity and value of products for the canning and preserving industry as reported at the censuses of 1914 and 1904.

Table 17 CLASS OF PRODUCT.	QUANTITY.		VALUE.				PER CENT OF INCREASE, ¹ 1904-1914.	
	1914	1904	1914	1904	Per cent of total.		Quantity.	Value.
					1914	1904		
Total value.....			\$249,791,129	\$131,041,417	100.0	100.0		90.6
Canned vegetables (cases) ²	55,144,772	29,719,879	92,290,724	45,899,131	35.2	35.0	85.5	101.1
Canned fruits (cases) ²	9,449,182	4,628,241	24,897,174	11,722,979	9.7	8.9	104.2	112.4
Dried fruits (pounds).....	568,537,384	343,579,623	34,771,812	15,064,784	13.5	12.0	65.5	122.0
Canned fish and oysters (cases) ²	8,738,104	(3)	22,401,004	13,544,683	8.7	10.3	(6)	65.4
Smoked fish (pounds).....	28,713,806	36,617,904	2,758,341	2,528,240	1.1	1.9	-21.6	9.1
Salted fish (pounds).....	131,149,037	113,676,290	8,172,477	6,408,012	3.2	4.9	15.5	27.5
All other products, including pickles, preserves and sauces.....			64,498,497	35,272,585	28.1	26.9		105.3

¹ A minus sign (-) denotes decrease.

² See Tables 16 and 19.

³ Includes canned soup.

⁴ See Tables 16 and 18.

⁵ Reported in pounds.

Increases in value appear for all classes of products covered by the table; and, with the exception of smoked fish, the least important of the items given, all products for which comparative figures for the two census years are presented also show increases in quantity. The greatest percentage of increase in quantity is that for canned fruits, and the greatest proportional increase in value is that for dried fruits. The rates of increase for the several fruit and vegetable products are much greater than those for fish and oysters.

It will be noted that where the percentages of increase in both quantity and value are given the rate of increase in the latter respect is greater than in the former. The greatest absolute increase in value, \$46,391,593, is shown for canned vegetables, which constitute by far the most important class of products, representing more than one-third of the total value at each census.

Table 18 shows the quantity and value of each specified product belonging to the canning and preserving industry, as returned at the censuses of 1914, 1909, and 1904.

Table 18	1914	1909	1904
Total value.....	\$249,791,129	\$165,272,412	\$131,041,417
The canning and preserving industry.....	\$243,439,859	\$159,849,213	\$130,465,076
Subsidiary products, other industries.....	\$6,351,270	\$5,423,199	\$575,441
FRUITS AND VEGETABLES.			
Total.....	\$151,959,810	\$92,641,367	\$73,286,894
The canning and preserving industry.....	\$149,623,706	\$90,796,335	\$72,998,756
Other industries.....	\$2,326,104	\$1,845,032	\$288,138
<i>Canned vegetables:</i>			
Cases 1.....	50,258,674	34,056,179	29,719,879
Value.....	\$84,413,667	\$55,068,941	\$45,899,131
The canning and preserving industry—			
Cases.....	49,339,694	33,887,162	29,579,616
Value.....	\$82,397,458	\$53,354,032	\$45,610,993
Other industries—			
Cases.....	918,950	769,017	140,263
Value.....	\$2,016,209	\$1,714,909	\$288,138
Tomatoes—			
Cases 3.....	16,200,202	12,909,986	9,411,084
Value.....	\$25,532,217	\$18,747,941	\$14,020,846
Beans—			
Cases 4.....	8,994,302	4,415,303	2,588,015
Value.....	\$16,565,021	\$7,931,737	\$4,133,810
Peas—			
Cases 4.....	8,826,284	5,901,703	4,694,492
Value.....	\$15,069,047	\$10,247,363	\$7,928,791
Corn—			
Cases 4.....	9,919,950	7,451,265	11,209,597
Value.....	\$13,923,057	\$10,332,136	\$15,952,286
Asparagus—			
Cases 4.....	637,601	342,838	(⁶)
Value.....	\$2,790,817	\$1,975,775	(⁶)
Kraut—			
Cases 3.....	1,184,219	(⁶)	(⁶)
Value.....	\$1,567,717	(⁶)	(⁶)
Tomato pulp—			
Cases 6.....	752,151	(⁶)	(⁶)
Value.....	\$1,454,051	(⁶)	(⁶)
Pumpkin—			
Cases 3.....	789,368	440,303	246,557
Value.....	\$1,023,008	\$576,043	\$346,497
Sweet potatoes—			
Cases 3.....	454,415	347,286	192,997
Value.....	\$736,759	\$531,651	\$284,385
Spinach—			
Cases 3.....	391,790	140,255	(⁶)
Value.....	\$736,686	\$294,414	(⁶)
Hominy—			
Cases 3.....	686,100	(⁶)	(⁶)
Value.....	\$712,991	(⁶)	(⁶)
Beets—			
Cases 3.....	251,632	126,422	(⁶)
Value.....	\$511,900	\$261,398	(⁶)
Succotash—			
Cases 4.....	270,077	254,365	(⁶)
Value.....	\$455,956	\$320,141	(⁶)
All other canned vegetables—			
Cases 3.....	900,483	2,317,453	1,377,137
Value.....	\$3,314,440	\$3,850,342	\$3,232,416
<i>Canned soups:</i>			
Cases 1.....	4,886,068	853,840	(⁶)
Value.....	\$7,877,057	\$2,588,834	(⁶)
The canning and preserving industry—			
Cases.....	4,876,451	853,840	(⁶)
Value.....	\$7,862,436	\$2,588,834	(⁶)
Other industries—			
Cases.....	9,647	(⁶)	(⁶)
Value.....	\$14,621	(⁶)	(⁶)
<i>Canned fruits:</i>			
Cases 1.....	9,449,182	5,528,878	4,628,241
Value.....	\$24,897,174	\$13,015,438	\$11,722,979
The canning and preserving industry—			
Cases.....	9,363,636	5,501,404	4,628,241
Value.....	\$24,765,530	\$12,938,474	\$11,722,979
Other industries—			
Cases.....	85,546	27,474	(⁶)
Value.....	\$131,644	\$76,964	(⁶)
Peaches—			
Cases 3.....	3,407,906	1,467,213	1,304,867
Value.....	\$9,585,773	\$3,763,698	\$3,902,441
Pears—			
Cases 3.....	1,062,762	637,782	789,120
Value.....	\$3,853,700	\$1,833,214	\$2,192,910
Berries—			
Cases 4.....	1,333,449	815,851	489,637
Value.....	\$3,102,245	\$1,754,927	\$1,058,659
Apricots—			
Cases 3.....	1,051,816	630,185	539,815
Value.....	\$3,060,626	\$1,825,311	\$1,641,919

^a The final figures here given differ from and should be substituted for those published on pages 42 and 43 of the abstract.

¹ See tables 16 and 19.

² Includes meat products canned, in 1914, valued at \$781,291.

³ Standard case contains 24 No. 3 cans. See table 16.

⁴ Standard case contains 24 No. 2 cans. See table 16.

⁵ Not reported separately.

Table 18—Continued	1914	1909	1904
<i>Canned fruits—Continued.</i>			
Apples—			
Cases 3.....	1,514,939	1,205,742	490,341
Value.....	\$2,392,289	\$1,598,720	\$738,013
Cherries—			
Cases 4.....	543,213	390,351	319,350
Value.....	\$1,019,975	\$1,019,013	\$823,622
Plums—			
Cases 4.....	288,326	220,057	(⁶)
Value.....	\$438,238	\$346,953	(⁶)
Pineapples—			
Cases 3.....	94,140	78,557	(⁶)
Value.....	\$364,250	\$313,647	(⁶)
Figs—			
Cases 3.....	20,605	5,079	(⁶)
Value.....	\$159,522	\$49,970	(⁶)
All other canned fruits—			
Cases 4.....	132,026	78,061	695,111
Value.....	\$311,556	\$219,985	\$1,363,515
<i>Dried fruits:</i>			
Pounds.....	^a 508,587,364	^a 485,335,890	^a 343,579,623
Value.....	\$34,771,912	\$21,968,154	\$15,064,794
The canning and preserving industry—			
Pounds.....	566,769,879	484,328,767	343,579,623
Value.....	\$34,608,282	\$21,914,995	\$15,064,784
Other industries—			
Pounds.....	1,817,485	1,007,033	(⁶)
Value.....	\$163,630	\$53,159	(⁶)
FISH AND OYSTERS.			
Value.....	\$33,332,822	\$27,850,319	\$22,481,934
The fish and oyster industry, value.....	\$32,806,841	\$27,648,289	\$22,194,635
Other industries, value.....	\$525,981	\$202,030	\$287,303
<i>Canned fish and oysters:</i>			
Cases 3.....	8,788,104	(⁶)	(⁶)
Value.....	\$22,401,004	\$17,592,960	\$13,544,686
The fish and oyster industry—			
Cases.....	8,771,860	(⁶)	(⁶)
Value.....	\$22,303,854	\$17,573,311	\$13,531,786
Other industries—			
Cases.....	16,244	(⁶)	(⁶)
Value.....	\$97,150	\$19,649	\$12,900
Salmon—			
Cases 7.....	1,513,800	(⁶)	(⁶)
Value.....	\$8,712,695	\$8,723,565	\$4,251,387
Sardines—			
Cases 10.....	5,012,199	(⁶)	(⁶)
Value.....	\$6,238,933	\$4,931,831	\$4,380,498
Oysters—			
Cases 7.....	944,639	(⁶)	(⁶)
Value.....	\$2,676,951	\$2,443,101	\$3,812,312
Shrimp—			
Cases 7.....	459,877	(⁶)	(⁶)
Value.....	\$1,725,621	\$660,021	(⁶)
Tuna—			
Cases 11.....	437,090	(⁶)	(⁶)
Value.....	\$1,638,675	(⁶)	(⁶)
Clams—			
Cases 7.....	185,186	(⁶)	(⁶)
Value.....	\$670,363	\$402,466	(⁶)
All other canned fish—			
Cases 4.....	235,813	(⁶)	(⁶)
Value.....	\$737,766	\$401,976	\$1,100,489
<i>Smoked fish:</i>			
Pounds.....	28,713,806	40,739,774	36,617,904
Value.....	\$2,759,341	\$2,939,258	\$2,528,240
The fish and oyster industry—			
Pounds.....	27,426,726	39,814,989	36,617,904
Value.....	\$2,642,131	\$2,900,417	\$2,528,240
Other industries—			
Pounds.....	1,287,080	924,785	(⁶)
Value.....	\$117,210	\$38,841	(⁶)
Herring—			
Pounds.....	11,504,126	21,369,856	19,737,537
Value.....	\$719,640	\$931,611	\$631,352

^a Standard case contains 12 No. 10 cans. See table 16.

⁷ Standard case contains 48 No. 1 cans. See table 16.

⁸ See table 16.

⁹ Reported in pounds in 1909 and 1904.

¹⁰ Standard case contains 48 No. 1 cans. See table 16.

¹¹ Standard case contains 48 No. 1 cans. See table 16.

Table 18—Continued.

	1914	1909	1904
<i>Smoked fish—Continued.</i>			
Salmon—			
Pounds.....	4,248,896	6,836,069	6,833,560
Value.....	\$638,975	\$950,540	\$831,184
Pinnan haddie—			
Pounds.....	4,095,693	4,513,222	3,014,160
Value.....	\$327,877	\$304,620	\$174,234
Sturgeon—			
Pounds.....	511,196	620,437	(¹)
Value.....	\$150,614	\$182,786	(¹)
All other smoked fish—			
Pounds.....	8,353,895	7,400,160	7,032,647
Value.....	\$922,235	\$569,701	\$891,470
<i>Salted and pickled fish:</i>			
Pounds.....	131,149,037	133,169,621	113,576,290
Value.....	\$8,172,477	\$7,318,101	\$6,409,012
The fish and oyster industry—			
Pounds.....	128,333,455	128,539,299	111,728,065
Value.....	\$7,890,856	\$7,174,561	\$6,134,609
Other industries—			
Pounds.....	2,815,552	4,630,322	1,847,625
Value.....	\$311,621	\$143,540	\$274,403
Cod—			
Pounds.....	68,456,917	54,302,338	48,757,819
Value.....	\$5,123,562	\$3,248,669	\$3,013,320
Herring—			
Pounds.....	21,133,974	21,718,467	15,824,192
Value.....	\$641,603	\$461,287	\$409,223
Mackerel—			
Pounds.....	6,224,313	9,045,409	8,326,566
Value.....	\$519,727	\$740,513	\$678,326
Haddock—			
Pounds.....	4,947,286	3,065,156	4,737,975
Value.....	\$218,359	\$148,191	\$213,394
All other salted fish—			
Pounds.....	30,388,547	45,038,191	35,929,738
Value.....	\$1,669,226	\$2,719,441	\$2,094,749
PICKLES, PRESERVES, AND SAUCES.			
Preserves.....	\$14,833,288	} \$44,780,726	} \$35,272,585
Pickles and sauces.....	\$45,303,671		
The canning and preserving industry—			
Preserves.....	\$13,261,576	} \$41,404,680	} \$35,272,585
Pickles and sauces.....	\$43,376,198		
Other industries:			
Preserves.....	\$1,571,712	} \$3,376,137	
Pickles and sauces.....	\$1,927,473		
All other products.....	\$4,361,538	(²)	(²)

¹ Not reported separately.² Pickles, preserves, and sauces include "all other products."

Canned vegetables.—The total output of canned vegetables increased between 1904 and 1914 by 20,538,795 cases, or 69.1 per cent, in quantity and \$38,514,536, or 83.9 per cent, in value. Every variety of canned vegetables for which separate figures are given for preceding census years show increases in both quantity and value for the five-year period 1909–1914, and, with the exception of corn, for the decade 1904–1914. For canned tomatoes, which constituted the principal class in all three years, an increase of 6,789,218 cases, or 72.1 per cent, is shown for the decade. The remaining canned vegetables for which separate figures are given, named in the order of their importance in 1914, as measured by value, were beans, peas, corn, asparagus, kraut, tomato pulp, pumpkin, sweet potatoes, spinach, hominy, beets, and succotash. The total production of canned soups for 1914 was 4,886,098 cases.

Canned fruits.—The output of canned fruits increased between 1904 and 1914 by 4,820,941 cases, or 104.2 per cent, in quantity and by \$13,174,195, or 112.4 per cent, in value. Every kind of canned fruit

for which separate figures for the three census years are given shows increases in both quantity and value for the decade 1904–1914 and for the five-year period 1909–1914. For canned peaches, the leading product in all three years, the increase during the decade amounted to 2,103,039 cases, or 161.2 per cent, in quantity and \$5,683,332, or 145.6 per cent, in value. The remaining canned fruits covered separately by the table, named in the order of their importance in 1914, as measured by value, are pears, berries, apricots, apples, cherries, plums, pineapples, and figs.

Dried fruits.—The increase in the output of dried fruits during the decade amounted to 225,007,741 pounds, or 65.5 per cent, in quantity and to \$19,107,128, or 122 per cent, in value. With the exception of dried apples, the output of which decreased in value between 1909 and 1914, although it increased in quantity, every class of dried fruits increased in quantity and value during the decade 1904–1914 and during the five-year period 1909–1914. For raisins, the leading product, the increase between 1904 and 1914 amounted to 104,634,078 pounds, or 86.2 per cent, in quantity and to \$7,589,264, or 119.5 per cent, in value. For dried prunes the corresponding increases were 21,283,706 pounds, or 18.1 per cent, and \$5,704,720, or 172.9 per cent. Dried apricots, peaches, and apples follow in order of importance in 1914, as measured by value. Of these three products, dried peaches show the greatest proportional gain in quantity during the decade, 139.4 per cent.

The statistics cover the product of fruit drying and packing establishments which buy the fruit or do drying and packing for others and of cooperative associations, but do not, as a rule, cover fruits dried by the grower on the farm.

Canned fish and oysters.—The quantity of canned fish and oysters for earlier census years was reported in pounds, so that comparable figures are not available, but the value of these products increased during the decade 1904–1914 by \$8,856,318, or 65.4 per cent. Canned salmon, the most important product of the group in 1914, as measured by value, shows a gain of \$4,461,308, or 104.9 per cent, in value for the decade, but a decrease of one-tenth of 1 per cent during the five-year period 1909–1914. For sardines, the next most important product, the increase in value during the decade amounted to \$1,858,435, or 42.4 per cent. Canned oysters show a decrease of \$1,135,361, or 29.8 per cent, in value for the decade. Canned shrimp, tuna fish, and clams follow in order of importance in 1914, as measured by value. The canning of tuna fish, a comparatively new product, was not reported at previous censuses.

Smoked fish.—The output of smoked fish decreased in quantity during the decade by 7,904,098 pounds, or 21.6 per cent, but increased in value by \$231,101 or 9.1 per cent. During the five-year period 1909–1914, the quantity and value both decreased, the former by 29.5 per cent and the latter by 6.1 per cent. At each of the three censuses smoked herring and salmon were the leading products of this group, as measured by either quantity or value. The output of the former decreased in both quantity and value during the five-year period 1909–1914, and the quantity also shows a decrease for the decade, although the value reported for 1914 is greater than that for 1904. In the case of the latter both the quantity and value of the 1914 output are less than the corresponding figures for either 1909 or 1904.

Salted fish.—The total output of salted and pickled fish increased during the period 1904–1914 by 17,572,747 pounds, or 15.5 per cent, in quantity and by \$1,763,465, or 27.5 per cent in value. Of the total value of all salt-fish products, that of cod formed 62.7

per cent in 1914 and 47 per cent in 1904. The output of cod increased during the decade by 19,699,098 pounds, or 40.4 per cent, in quantity and by \$2,110,242, or 70 per cent, in value. Herring, mackerel, and haddock follow in importance in 1914, in the order in which named, as measured by either quantity or value. These three products, taken as a group, show increases of only 11.8 per cent in quantity and 6.1 per cent in value for the ten-year period.

It may be noted that for many of the classes of canned vegetables and fruits, dried fruits, and salted and smoked fish, the percentages of increase in value were greater than those in quantity. In some cases, however, these indicated increases in prices may be due, in whole or part, to increases in the relative importance of the higher-priced grades of the products in question.

Table 19 shows, for 1914, for each class of canned vegetables and fruits, the number of cases of each size of cans as reported, together with the corresponding equivalent in standard cases.

PRODUCT.	Stand- ard size of can.	Total number of cases, reduced to standard size, 24 cans to the case.	NUMBER OF CASES OF—					
			No. 1 cans.	No. 2 cans.	No. 2½ cans.	No. 3 cans.	No. 10 cans.	Special size.
Canned vegetables.....		50,258,674	5,123,941	28,481,283	4,100,160	14,015,125	1,672,559	.....
Asparagus.....	2	637,601	518,901	53,739	243,208	5,699	5,927	.....
Beans—								
Baked.....	2	5,977,383	2,977,537	2,720,461	668,257	546,984	55,975	1,623
String.....	2	1,790,024	12,496	1,500,190	18,985	73,884	74,507	40
Lima.....	2	443,484	22,935	413,363	793	117	8,693	.....
All other beans.....	2	783,411	34,851	687,264	31,905	19,768	4,592	.....
Beets.....	3	251,632	1,528	106,434	2,624	166,197	8,904	.....
Corn.....	3	9,919,950	52,090	9,821,421	521	5,486	31,862	.....
Hominy.....	3	686,100	10,574	675,526	47,993	623,205	12,149	.....
Kraut.....	3	1,184,219	10,574	154,597	140,290	929,912	15,607	.....
Succotash.....	2	270,077	1,498	267,774	.....	777	.....	.....
Peas.....	2	8,826,284	237,244	8,303,610	194,524	15,028	68,833	1,828
Pumpkin.....	3	789,368	228	44,432	38,096	608,098	89,924	.....
Sweet potatoes.....	3	454,415	228	3,655	65,479	393,313	3,017	.....
Spinach.....	3	391,790	717	35,450	15,677	278,091	57,572	.....
Squash.....	3	165,682	275	721	10,225	78,113	58,856	.....
Tomatoes.....	3	16,200,392	436,538	3,821,066	2,609,382	10,111,296	911,098	13,664
Tomato pulp.....	10	1,752,151	268,248	3,281	2,169	16,182	216,276	496,181
Okra and tomatoes.....	3	34,042	17,552	24,457	.....	9,518	1,776	.....
All other canned vegetables.....	3	700,759	500,101	509,652	10,032	124,324	46,205	.....
Canned soups.....	1	4,886,098	4,413,517	93,429	9,355	59,678	16,561	.....
Canned fruits.....		9,449,182	793,676	1,122,919	4,558,146	812,449	2,304,284	.....
Apples.....	3	1,514,939	5	4,520	20,452	135,290	1,019,716	.....
Apricots.....	3	1,051,816	116,690	16,117	845,935	16,653	210,434	.....
Berries—								
Blackberries.....	2	452,161	1,138	142,756	21,096	46,487	106,368	.....
Blueberries.....	2	151,636	85	54,412	400	100	48,266	.....
Gooseberries.....	2	89,593	255	60,643	43	733	13,834	.....
Raspberries.....	2	414,632	6,915	260,083	13,582	98	71,983	.....
Strawberries.....	2	185,919	113,027	10,058	2,615	21,487	14,263	.....
Loganberries.....	3	39,508	27,599	2,631	.....	.....	97,129	.....
Cherries.....	2	543,213	24,525	152,867	131,365	13,080	1,558	.....
Currents.....	2	3,754	970	2	.....	100	3,248	232
Figs.....	2	20,605	31,286	4,294	1,866	1,200	6,774	.....
Grapes.....	3	64,205	5,204	154	38,124	341,597	534,497	.....
Peaches.....	3	3,407,906	328,334	111,066	2,604,332	220,776	90,215	.....
Pears.....	3	1,062,762	118,972	115,674	725,911	28,724	6,699	.....
Pineapples.....	3	94,140	116,187	18,507	6,500	2,983	43,596	.....
Plums.....	2	288,326	1,057	44,223	121,634	9	1,219	.....
Quinces.....	2	2,629	40	84	59	.....	13,148	.....
All other canned fruits.....	2	61,438	15,164	6,921	14,158	1,960	.....	.....

1 12 cans to the case.

2 48 cans to the case.

Table 20 gives, for 1914, the total number of cases of each class of canned vegetables and fruits, as reported, distributed according to size of cans.

The No. 2½ can is used extensively in California,

Utah, Michigan, Colorado, Indiana, and Ohio. More than two-thirds of the total number of cases containing this size of cans were packed in California alone.

Table 20

PRODUCT.	NUMBER OF CASES PACKED IN 1914.							
	Total.	No. 1 size cans.	No. 2 size cans.	No. 2½ size cans.	No. 3 size 4½-inch cans.	No. 3 size 5-inch cans.	No. 3 size 5½-inch cans.	No. 10 size cans.
Aggregate number of cases.....	68,031,427	10,331,134	129,638,740	8,667,661	113,064,351	1,527,150	302,815	14,439,576
Canned vegetables.....	53,847,181	5,123,941	128,482,392	4,100,160	112,316,287	1,405,948	299,722	12,118,731
Asparagus.....	827,474	518,901	53,739	243,208	3,884	1,815	.....	5,927
Beans—								
Baked.....	6,969,620	2,977,537	12,720,867	668,257	537,400	9,239	345	55,975
String.....	1,680,677	12,496	11,500,295	18,955	61,000	12,046	838	74,507
Lima.....	445,901	22,635	413,363	763	77	40	.....	8,693
All other.....	778,354	34,851	687,218	31,905	19,768	.....	.....	4,592
Beets.....	285,597	1,528	109,434	2,624	139,070	27,037	.....	8,904
Corn.....	9,911,320	52,030	9,821,421	521	4,820	177	489	31,862
Hominy.....	633,737	678	9,712	47,963	607,903	15,000	302	12,149
Kraut.....	1,200,980	10,374	154,597	140,250	910,548	28,232	1,132	15,607
Succotash.....	270,049	1,498	267,774	.....	.....	.....	.....	777
Peas.....	8,819,927	237,244	18,304,298	194,524	10,131	4,106	791	68,833
Pumpkin.....	780,560	10	44,432	38,096	528,581	72,509	0,708	89,924
Sweet potatoes.....	465,692	228	3,655	65,479	342,720	50,516	77	3,017
Spinach.....	387,507	717	35,450	15,677	265,646	12,141	304	57,572
Squash.....	148,190	275	721	10,225	53,157	24,956	.....	58,856
Tomatoes.....	17,896,212	436,538	3,821,066	2,609,382	18,694,767	1,143,056	280,305	911,086
Tomato pulp.....	982,337	298,248	3,281	2,169	13,967	2,115	100	1,692,457
Okra and tomatoes.....	53,303	17,552	24,457	8,997	8,997	65	456	1,776
All other canned vegetables.....	1,190,314	500,101	509,652	10,032	113,551	2,898	7,875	46,205
Canned soups.....	4,592,540	4,413,517	93,429	9,355	59,678	.....	.....	16,561
Canned fruits.....	9,591,706	793,676	1,122,919	4,558,146	1,688,386	121,202	3,093	2,304,284
Apples.....	1,179,953	5	4,520	20,452	127,640	6,665	949	1,019,716
Apricots.....	1,205,829	116,690	16,117	845,935	9,507	6,925	221	210,434
Blackberries.....	317,845	1,138	142,756	21,096	44,875	1,612	.....	106,368
Blueberries.....	103,263	85	54,412	400	100	.....	.....	48,266
Cherries.....	418,966	24,525	152,867	131,365	8,476	4,604	.....	97,129
Currents.....	2,630	970	2	.....	.....	100	.....	1,538
Figs.....	42,126	31,286	4,294	1,866	1,432	.....	.....	3,248
Grapes.....	50,420	5,204	154	38,124	76	88	.....	6,774
Gooseberries.....	75,508	255	60,643	43	101	632	.....	13,834
Peaches.....	3,919,736	328,334	111,066	2,604,332	295,665	45,374	558	534,407
Pears.....	1,271,548	118,972	115,674	725,911	174,936	45,551	289	90,215
Pineapples.....	176,617	116,187	18,507	6,500	23,037	5,687	.....	6,099
Plums.....	213,403	1,057	44,223	121,634	1,814	859	220	43,566
Raspberries.....	342,601	6,915	250,083	13,582	.....	98	.....	71,983
Strawberries.....	174,038	26,849	113,027	10,058	660	1,105	850	21,487
All other canned fruit.....	97,165	15,204	34,574	16,848	61	1,902	6	28,570

¹ Includes special size cans as shown in Table 19.

VALUE OF PRODUCTS, BY STATES.

Table 21 shows the values of the principal products for the leading states producing each, as reported at the censuses of 1914, 1909, 1904, and 1899.

Table 21 PRODUCT AND STATE.	Table 21 VALUE.			
	1914	1909	1904	1899
CANNED VEGETABLES.				
Beans.....	\$16,565,021	\$7,931,737	\$4,133,810	\$2,025,123
California.....	275,807	87,059	133,494	56,797
Illinois.....	1,062,842	562,249	321,458	251,483
Indiana.....	2,306,309	2,116,648	491,233	270,870
Maine.....	443,652	151,476	92,231	33,635
Maryland.....	947,047	778,732	1,031,025	470,314
Michigan.....	1,261,899	154,697	(1)	(1)
New Jersey.....	2,764,529	537,458	272,755	64,768
New York.....	1,819,188	1,024,065	1,055,253	448,314
Ohio.....	1,051,187	264,005	241,125	199,615
Pennsylvania.....	3,583,881	1,730,212	91,416	(1)
Utah.....	144,791	33,084	8,220	(1)
Wisconsin.....	294,070	101,763	55,968	23,000
All other states.....	609,821	390,289	339,632	206,527
Corn.....	13,923,057	10,332,136	15,952,386	8,191,383
Illinois.....	2,173,480	2,170,082	2,403,720	1,188,700
Indiana.....	943,641	679,446	958,455	270,265
Iowa.....	1,868,963	1,241,469	2,616,178	1,146,075
Maine.....	2,038,716	1,320,223	1,525,089	1,038,316
Maryland.....	1,939,285	1,039,905	2,021,627	1,070,086
New York.....	1,252,038	1,197,999	2,272,682	1,925,496
Ohio.....	1,441,272	1,156,509	1,736,503	642,161
All other states.....	2,265,652	1,526,512	2,418,132	909,274
Peas.....	15,089,047	10,247,363	7,928,791	4,465,673
Illinois.....	696,975	227,068	35,309	(1)
Indiana.....	620,357	753,527	644,439	310,172
Maryland.....	894,929	619,981	1,019,131	957,436
Michigan.....	976,005	796,840	471,613	92,000
New York.....	3,899,570	2,681,366	2,598,291	1,473,912
Wisconsin.....	5,549,499	3,410,628	2,011,226	807,408
All other states.....	2,451,712	1,757,953	1,148,782	824,745
Tomatoes.....	25,532,217	18,747,941	14,020,846	13,666,560
California.....	3,122,532	1,120,632	845,805	2,068,907
Delaware.....	1,965,958	1,605,069	1,007,595	1,121,546
Indiana.....	1,809,912	1,469,219	1,820,876	1,286,027

¹ Comparable figures can not be given.

Table 21—Continued.

PRODUCT AND STATE.	Table 21 VALUE.			
	1914	1909	1904	1899
CANNED VEGETABLES—con.				
Tomatoes—Continued.				
Maryland.....	\$9,851,727	\$7,674,960	\$4,976,098	\$3,659,137
New York.....	1,249,875	1,502,898	1,273,426	1,668,555
New Jersey.....	1,055,920	657,875	389,036	483,112
Ohio.....	1,822,862	707,682	535,751	814,044
Utah.....	1,250,290	603,898	566,578	263,363
Virginia.....	1,401,303	1,269,209	747,838	474,305
All other states.....	3,001,848	2,137,499	1,857,843	1,827,174
CANNED FRUITS.				
Apples.....	2,392,289	1,898,720	738,013	1,125,119
California.....	214,021	136,855	67,591	71,427
Maine.....	77,603	122,791	6,794	30,479
Maryland.....	131,417	168,458	70,980	137,884
Michigan.....	227,710	275,437	103,419	66,260
New York.....	1,269,372	753,231	354,817	560,048
Pennsylvania.....	144,958	100,759	22,463	22,371
All other states.....	327,208	341,189	110,949	236,650
Apricots.....	3,060,626	1,825,311	1,641,919	1,583,252
California.....	2,963,672	1,819,558	1,619,757	1,582,927
All other states.....	96,954	5,753	22,162	325
Cherries.....	1,628,975	1,019,013	825,522	307,788
California.....	459,005	491,575	457,169	155,813
Michigan.....	142,951	72,710	44,801	.....
New York.....	629,345	323,803	133,814	71,881
Oregon.....	125,925	49,203	72,465	.....
All other states.....	271,749	81,722	117,273	80,094
Peaches.....	9,585,773	3,753,698	3,902,441	4,283,165
California.....	8,685,831	3,013,203	2,640,524	3,103,775
Georgia.....	124,971	156,282	.....	83,475
Maryland.....	334,070	158,839	753,003	758,919
Michigan.....	233,051	175,386	179,838	102,540
New York.....	40,338	141,142	39,399	72,591
All other states.....	167,512	108,846	289,677	161,865
Pears.....	3,853,700	1,833,214	2,192,910	2,188,201
California.....	2,796,356	1,316,022	1,577,823	1,610,900
Maryland.....	301,398	111,949	199,802	151,012
New Jersey.....	153,980	82,082	97,202	.....
New York.....	375,300	216,858	172,944	226,082
Oregon.....	78,404	42,842	45,464	.....
Washington.....	71,969	.....	.....	.....
All other states.....	76,283	63,461	101,675	200,207

Table 21—Continued.
PRODUCT AND STATE.

VALUE.

	1914	1909	1904	1899
CANNED FRUITS—continued.				
Berries.....	\$3,102,245	\$1,754,927	\$1,058,659	\$1,092,975
California.....	345,322	171,995	168,040	218,733
Maine.....	246,504	105,434	(1)	(1)
Maryland.....	319,587	375,319	(1)	(1)
Michigan.....	320,375	150,082	(1)	(1)
New York.....	716,577	596,130	372,171	321,759
Oregon.....	² 286,424	46,273	39,343	.....
Washington.....	³ 542,866	72,832	.....	.....
All other states.....	324,590	236,862	478,505	552,483
DRIED FRUITS.				
Apples.....	2,889,406	3,098,095	1,758,610	1,906,642
Arkansas.....	194,727	112,091	129,094	80,861
California.....	603,673	481,173	40,659	155,893
Michigan.....	22,669	141,656	177,343	243,285
New York.....	1,893,015	2,333,137	1,331,895	1,275,109
All other states.....	115,322	30,038	79,619	151,494
Apricots.....	3,615,857	2,277,177	1,410,838	455,394
California.....	3,602,690	2,277,177	1,410,838	442,544
All other states.....	13,167	.....	.....	12,850
Peaches.....	2,915,595	2,423,083	1,702,205	312,495
California.....	2,888,992	2,422,043	1,701,105	301,495
All other states.....	26,603	1,040	1,100	11,000
Prunes.....	9,004,348	5,130,412	3,299,628	970,927
California.....	7,956,549	4,394,922	3,109,878	907,041
Oregon.....	822,837	470,911	28,000	17,351
Washington.....	112,932	258,909	.....	14,645
All other states.....	112,030	5,670	101,750	81,890
Raisins.....	13,938,645	6,912,533	6,349,381	1,062,268
California.....	13,681,048	6,912,533	6,349,381	1,062,268
All other states.....	257,597	.....	.....	.....
CANNED FISH AND OYSTERS.				
Salmon.....	8,712,695	8,723,505	4,251,387	5,679,324
California.....	241,335	27,515	125,020	278,038
Oregon.....	2,314,771	1,341,481	1,694,762	1,655,329
Washington.....	6,156,558	7,354,569	2,431,605	3,745,957
All other states.....	81	.....	.....	.....
Sardines.....	6,238,933	4,931,831	4,380,498	4,212,351
California.....	368,420	238,607	78,000	78,860
Maine.....	5,780,857	4,609,224	4,291,324	4,049,784
All other states.....	89,656	84,000	11,174	83,707
Oysters.....	2,676,951	2,443,101	3,812,312	2,054,800
Georgia.....	79,193	105,740	256,750	(1)
Louisiana.....	237,425	333,436	507,373	71,625
Maryland.....	1,177,081	761,198	548,648	823,567
Mississippi.....	526,106	311,161	1,340,942	639,603
South Carolina.....	324,405	268,438	529,511	(1)
All other states.....	332,731	613,128	629,090	520,005
Shrimp.....	1,725,621	690,021	(1)	(1)
Georgia.....	109,494	.....	(1)	(1)
Louisiana.....	644,132	253,184	(1)	(1)
Mississippi.....	934,535	433,693	(1)	(1)
All other states.....	17,460	3,144	(1)	(1)
SMOKED FISH.				
Herring.....	719,640	931,611	631,352	330,590
Maine.....	237,703	255,498	206,879	136,310
Massachusetts.....	210,404	457,485	155,814	105,729
All other states.....	271,533	218,628	268,659	88,551
Salmon.....	638,975	950,540	831,184	136,331
New York.....	442,243	486,910	319,620	13,900
Washington.....	123,217	389,620	405,026	93,772
All other states.....	73,515	74,010	100,538	28,659
SALTED FISH.				
Cod.....	5,123,562	3,248,669	3,013,320	3,081,045
Maine.....	348,741	333,621	141,345	80,454
Massachusetts.....	3,870,529	2,542,873	2,511,159	2,544,552
Washington.....	247,230	201,118	49,366	45,445
All other states.....	657,062	171,057	311,450	410,594
Mackerel.....	519,727	740,513	678,326	662,008
Massachusetts.....	490,484	729,828	668,326	644,523
All other states.....	29,243	10,685	10,000	17,485

¹ Comparable figures can not be given.² Includes loganberries to the value of \$127,888, tabulated as "all other canned fruits."³ Includes loganberries to the value of \$27,633, tabulated as "all other canned fruits."

Canned vegetables.—In the production of tomatoes, the most important of the canned vegetables, Maryland was far in the lead of all other states at all four censuses, reporting 38.6 per cent of the total value for 1914, 40.9 per cent for 1909, 35.5 per cent for 1904, and 26.8 per cent for 1899. Eight states, Maryland,

California, Delaware, Indiana, New Jersey, New York, Utah, and Virginia, each reported canned tomatoes for 1914 in excess of \$1,000,000 in value, their combined output representing 85 per cent of the total value of this product.

In the production of canned corn, seven states, Illinois, Indiana, Iowa, Maine, Maryland, New York, and Ohio, were especially prominent, together reporting 83.7 per cent of the total value for 1914. Illinois, which ranked first in this respect at the last two censuses, reported 15.6 per cent of the total value for 1914 and 21 per cent for 1909.

Of the total value of canned peas, 62.6 per cent for 1914 and 59.4 per cent for 1909 were reported by the two states of Wisconsin and New York. Wisconsin led in value of output of this product in 1914 and 1909, and New York in 1904 and 1899.

The production of canned beans, which includes canned baked beans, string beans, Lima beans, and other kinds of beans, is well distributed among the states. Illinois, Indiana, Michigan, New Jersey, New York, Ohio, and Pennsylvania each reported for 1914 canned beans in excess of \$1,000,000 in value. The four states of Indiana, New Jersey, New York, and Pennsylvania together reported 63.2 per cent of the total for 1914. Pennsylvania led in 1914, Indiana in 1909, New York in 1904, and Maryland in 1899.

Canned asparagus was first shown separately in the report for 1909, the value of this product for that year being given as \$1,975,775. The value reported for 1914 was \$2,790,817, of which \$2,733,950, or 98 per cent, was contributed by California.

Canned fruits.—Of the total value of canned fruits in 1914, California reported 64.2 per cent. Of the total values of canned peaches, the most important of this class of products, California contributed 90.6 per cent in 1914, 80.3 per cent in 1909, 67.7 per cent in 1904, and 72.5 per cent in 1899. By far the greater portions of the canned pears and canned apricots—very nearly all the latter—were reported from California at each of the four censuses. Of the totals for these products in 1914, as measured by value, the state reported 72.6 per cent and 96.8 per cent, respectively.

Of the total value of canned apples, New York reported 53.1 per cent for 1914, 39.7 per cent for 1909, 48.1 per cent for 1904, and 49.8 per cent for 1899.

Dried fruits.—Of the total value of dried fruits, California reported 88.4 per cent in 1914 and 81.3 per cent in 1909. The state produced practically all the dried apricots, peaches, prunes, and raisins at each of the four censuses. Of the total value of dried apples, New York reported 65.5 per cent for 1914, 75.3 per cent for 1909, 75.7 per cent for 1904, and 66.9 per cent for 1899.

Canned fish and oysters.—Of the canned salmon, the state of Washington reported 70.7 per cent, as measured by value, for 1914, 84.3 per cent for 1909, 57.2 per cent for 1904, and 66 per cent for 1899. Most of the canned sardines were reported by Maine at each of the

four censuses. Four states, Maryland, Mississippi, South Carolina, and Louisiana, together contributed 84.6 per cent of the total value of canned oysters for 1914, Maryland with 44 per cent, being the most important. Of the total value of shrimp in 1914, Louisiana and Mississippi together reported 92.6 per cent. Of canned tuna fish, the entire product came from California.

Smoked fish.—Of the total value of smoked herring, the most important smoked fish, Maine and Massachusetts together reported 62.3 per cent for 1914 and 76.5 per cent for 1909. Of smoked salmon, New York and Washington produced 69.2 per cent and 19.3 per cent,

respectively, as measured by value, in 1914, and 51.2 per cent and 41 per cent, respectively, in 1909.

Salted fish.—Massachusetts reported 75.5 per cent of the total value of salted cod for 1914, 78.3 per cent for 1909, 83.3 per cent for 1904, and 82.6 per cent for 1899. The state also produced practically the entire output of salt mackerel—96.1 per cent of the total value in 1914 and 98.6 per cent in 1909.

Detailed statistics of products, by states.—Table 22 gives detailed statistics as to quantities and values of the various classes of products of the canning and preserving industry, by states, for 1914.

Table 22	Quantity.	Value.	PRODUCT AND STATE.	Quantity.	Value.	PRODUCT AND STATE.	Quantity.	Value.
PRODUCT AND STATE.								
CANNED VEGETABLES.			CANNED VEGETABLES—CON.			CANNED VEGETABLES—CON.		
<i>Cases.</i>			<i>Cases.</i>			<i>Cases.</i>		
Asparagus.....	1,637,601	\$2,790,817	Corn.....	19,919,950	\$13,923,057	Sweet potatoes.....	2,454,415	\$736,759
California.....	620,859	2,733,950	Delaware.....	215,280	281,758	Alabama.....	1,794	3,265
Illinois.....	6,300	13,390	Illinois.....	1,535,215	2,173,480	Delaware.....	39,093	59,458
New York.....	8,563	37,982	Indiana.....	608,443	943,641	Georgia.....	18,466	21,664
All other states.....	1,879	5,495	Iowa.....	1,500,154	1,808,993	Louisiana.....	15,008	21,358
Beans, baked.....	15,977,383	11,535,047	Maine.....	1,101,353	2,038,716	Maryland.....	131,451	213,635
California.....	29,615	57,122	Maryland.....	1,432,082	1,939,295	Mississippi.....	65,872	99,997
Colorado.....	12,109	22,295	Michigan.....	138,185	213,558	New Jersey.....	24,936	48,169
Connecticut.....	15,050	27,858	Minnesota.....	274,193	300,477	Tennessee.....	9,943	18,313
Illinois.....	481,088	715,372	Missouri.....	3,091	4,003	Virginia.....	133,463	206,335
Indiana.....	1,395,614	2,081,200	Nebraska.....	225,821	283,597	All other states.....	28,399	53,560
Iowa.....	40,788	57,908	New Hampshire.....	51,061	57,486			
Maine.....	232,737	346,220	New York.....	762,562	1,292,038	Spinach.....	3,391,700	736,686
Maryland.....	387,495	509,124	Ohio.....	1,167,083	1,441,272	California.....	23,755	50,744
Michigan.....	708,376	874,541	Pennsylvania.....	207,152	255,606	Maryland.....	282,795	483,688
New Jersey.....	1,253,120	2,284,871	Tennessee.....	36,964	53,399	New York.....	52,506	133,028
New York.....	450,905	62,805	Vermont.....	157,111	278,746	Ohio.....	15,450	30,967
Ohio.....	826,883	1,440,224	Virginia.....	1,584	2,032	All other states.....	17,194	38,259
Pennsylvania.....	18,949	72,314	Wisconsin.....	349,542	442,419			
Utah.....	32,045	49,243	All other states.....	25,293	32,551	Squash.....	2,165,682	294,409
Vermont.....	32,052	40,575	Hominy.....	686,100	712,991	California.....	21,103	38,983
Wisconsin.....	3,468	9,671	Colorado.....	25,868	37,801	Maine.....	25,172	60,830
All other states.....			Illinois.....	120,474	118,548	Maryland.....	7,317	11,287
Beans, string.....	1,790,024	3,060,330	Indiana.....	456,591	452,927	Michigan.....	24,778	45,184
California.....	78,233	141,189	Iowa.....	20,595	32,361	New Jersey.....	45,024	66,098
Colorado.....	134,997	187,922	Maryland.....	8,632	9,041	New York.....	19,819	36,530
Indiana.....	13,305	10,509	Ohio.....	13,185	19,070	All other states.....	21,809	35,497
Kentucky.....	12,619	15,033	Tennessee.....	38,167	38,300			
Maine.....	37,207	55,257	Utah.....	1,988	4,293	Succotash.....	1,270,077	455,956
Maryland.....	277,959	373,208	All other states.....	600	650	Maine.....	33,547	61,037
Michigan.....	95,381	173,925	Kraut.....	1,184,219	1,567,717	Maryland.....	24,585	33,185
Minnesota.....	3,974	7,291	California.....	4,032	8,596	Michigan.....	55,203	91,597
New York.....	705,220	1,444,085	Colorado.....	84,372	147,951	New York.....	115,427	200,044
North Carolina.....	6,559	8,597	Illinois.....	80,280	102,438	Ohio.....	19,249	33,028
Ohio.....	27,083	50,015	Indiana.....	359,619	434,186	All other states.....	22,061	34,065
Oregon.....	9,292	16,231	Iowa.....	17,006	24,277	Tomatoes.....	2,16,200,302	25,532,217
Pennsylvania.....	96,292	134,579	Maryland.....	39,028	50,965	Arkansas.....	152,536	201,524
Tennessee.....	42,216	49,817	Michigan.....	54,307	75,297	California.....	1,730,487	3,122,532
Utah.....	48,835	72,400	Minnesota.....	8,440	14,315	Colorado.....	149,363	297,093
Vermont.....	16,494	29,195	New York.....	195,069	260,460	Connecticut.....	46,515	90,974
Virginia.....	14,774	15,178	Ohio.....	161,502	195,658	Delaware.....	1,326,275	1,965,958
Washington.....	10,643	15,446	Tennessee.....	11,902	15,073	Illinois.....	74,850	125,026
Wisconsin.....	139,014	228,592	Wisconsin.....	145,401	176,642	Indiana.....	1,172,670	1,809,912
All other states.....	19,927	25,801	All other states.....	22,061	52,859	Iowa.....	165,338	268,354
Beans, Lima.....	1,443,484	904,050	Peas.....	18,826,284	15,089,047	Kentucky.....	111,789	197,833
California.....	31,735	57,785	California.....	165,540	317,676	Maryland.....	6,656,810	9,851,727
Illinois.....	15,797	30,031	Colorado.....	278,990	417,271	Michigan.....	141,449	227,788
Indiana.....	100	120	Delaware.....	178,810	237,853	Missouri.....	366,331	570,993
Maine.....	9,037	12,576	Illinois.....	434,615	696,975	New Jersey.....	695,218	1,249,875
Maryland.....	22,922	38,353	Indiana.....	434,411	620,357	New York.....	563,400	1,055,920
Michigan.....	68,710	143,777	Maryland.....	564,442	894,929	North Carolina.....	11,444	19,133
New Jersey.....	220,442	478,058	Michigan.....	490,131	976,005	Ohio.....	508,829	822,882
New York.....	23,096	43,282	Minnesota.....	83,355	121,280	Pennsylvania.....	218,105	323,877
Ohio.....	29,340	57,713	New Jersey.....	85,512	181,642	Tennessee.....	165,524	271,738
Virginia.....	12,660	27,327	Ohio.....	1,957,737	3,809,570	Texas.....	518	1,440
All other states.....	9,645	15,028	Ohio.....	259,837	461,638	Utah.....	696,257	1,250,280
Beans, all other.....	1,783,411	1,065,594	Pennsylvania.....	63,587	87,925	Virginia.....	1,025,477	1,401,303
California.....	15,299	19,711	Utah.....	334,144	510,892	West Virginia.....	115,720	165,671
Illinois.....	248,552	314,718	Virginia.....	17,540	28,512	Wisconsin.....	14,945	26,576
Indiana.....	181,972	208,480	Wisconsin.....	3,421,125	5,549,499	All other states.....	90,452	163,828
Iowa.....	20,057	26,064	All other states.....	56,508	87,003	Tomato pulp.....	2,752,151	1,454,051
Maine.....	20,639	29,599	Pumpkin.....	2,789,368	1,023,008	California.....	15,205	37,916
Maryland.....	23,649	26,362	California.....	7,944	11,348	Colorado.....	8,972	12,857
Michigan.....	50,201	69,656	Colorado.....	32,412	52,578	Delaware.....	66,361	130,218
New York.....	151,664	268,924	Delaware.....	6,670	7,626	Indiana.....	325,398	506,790
Ohio.....	41,822	67,845	Illinois.....	70,016	92,198	Maryland.....	72,841	171,674
Wisconsin.....	22,259	24,626	Indiana.....	304,150	354,743	Michigan.....	38,358	81,913
All other states.....	7,297	9,609	Iowa.....	34,983	45,509	New Jersey.....	105,001	195,496
Beets.....	251,632	511,900	Kentucky.....	7,729	10,023	New York.....	21,178	59,863
Maryland.....	15,333	33,290	Michigan.....	14,209	22,248	Ohio.....	60,777	89,196
New Jersey.....	15,068	28,813	Minnesota.....	5,662	8,925	Pennsylvania.....	8,167	10,536
New York.....	93,517	209,609	Missouri.....	1,004	1,424	Utah.....	11,128	28,428
Ohio.....	31,402	67,048	New Jersey.....	80,167	78,404	All other states.....	18,765	39,414
Pennsylvania.....	20,107	44,242	New York.....	84,202	137,470	Okra and tomatoes.....	2,34,042	75,946
Wisconsin.....	58,086	89,483	Ohio.....	102,279	130,915	Louisiana.....	17,895	46,340
All other states.....	18,119	39,855	Pennsylvania.....	10,214	14,632	Maryland.....	9,001	18,106
			All other states.....	47,657	56,940	South Carolina.....	1,741	2,879
						Virginia.....	434	847
						All other states.....	4,971	7,774

1 Standard case contains 24 No. 2 cans. See Table 16.

2 Standard case contains 24 No. 3 cans. See Table 16.

3 Standard case contains 12 No. 10 cans. See Table 16.

Table 22—Continued.
PRODUCT AND STATE.

PRODUCT AND STATE.	Quantity.	Value.	PRODUCT AND STATE.	Quantity.	Value.	PRODUCT AND STATE.	Quantity.	Value.
CANNED VEGETABLES—CON.			CANNED FRUITS—continued.			CANNED FISH AND OYSTERS—continued.		
All other vegetables.....	<i>Cases.</i> 1700,759	\$2,944,085	Pears.....	<i>Cases.</i> 1,062,762	\$3,853,700	Oysters.....	<i>Cases.</i> 2,944,639	\$2,676,951
California.....	44,814	232,110	California.....	672,782	2,796,356	California.....	24,870	170,946
Illinois.....	67,545	808,555	Delaware.....	17,931	33,984	Florida.....	16,172	45,657
Indiana.....	119,375	343,113	Maryland.....	156,166	301,398	Georgia.....	35,902	79,193
Louisiana.....	29,030	77,843	Michigan.....	7,345	14,519	Louisiana.....	78,516	237,425
Maine.....	8,911	21,916	New Jersey.....	57,667	153,990	Maryland.....	433,440	1,177,091
Maryland.....	57,887	126,051	New York.....	94,247	375,300	Mississippi.....	196,047	526,106
Michigan.....	19,873	25,065	Oregon.....	20,838	78,404	North Carolina.....	33,795	76,680
New Jersey.....	62,032	120,624	Utah.....	4,777	14,347	South Carolina.....	118,416	324,405
New York.....	7,026	12,269	Washington.....	25,850	71,969	Virginia.....	7,429	35,200
Ohio.....	208,272	817,005	All other states.....	5,159	13,433	All other states.....	52	1,243
Pennsylvania.....	147	280	Pineapples.....	194,140	364,250	Shrimp.....	2,459,877	1,725,621
Tennessee.....	57,669	326,720	Maryland.....	68,259	246,047	Georgia.....	26,014	109,494
Texas.....	5,054	6,621	New York.....	25,879	118,199	Louisiana.....	162,005	644,132
Wisconsin.....	13,264	25,092	All other states.....	2	4	Mississippi.....	266,021	954,535
All other states.....	24,886,098	7,877,057	Plums.....	288,326	438,238	All other states.....	5,837	17,460
CANNED FRUITS.			California.....	150,216	247,505	Tuna.....	6,437,090	1,638,675
Apples.....	1,514,939	2,392,289	Michigan.....	31,126	38,616	California.....	437,090	1,638,675
Arkansas.....	48,435	61,555	New York.....	72,106	104,047	Clams.....	2,185,186	670,363
California.....	110,672	214,021	Oregon.....	10,699	15,969	Florida.....	6,197	26,884
Colorado.....	20,093	33,066	Washington.....	16,834	18,507	Maine.....	94,813	270,580
Maine.....	55,924	77,603	All other states.....	7,345	13,594	Oregon.....	11,690	40,828
Maryland.....	87,570	131,417	Raspberries.....	414,632	1,137,207	Virginia.....	14,874	83,068
Michigan.....	140,516	227,710	California.....	3,445	10,966	Washington.....	53,000	239,716
Missouri.....	12,971	19,349	Illinois.....	2,574	7,577	All other states.....	4,612	9,287
Nebraska.....	3,415	5,355	Maryland.....	9,728	17,930	Clam bouillon.....	2,45,214	80,867
New York.....	805,499	1,269,372	Michigan.....	67,142	166,394	Florida.....	30,960	65,704
North Carolina.....	25,430	31,554	New York.....	199,230	561,560	All other states.....	14,254	16,168
Ohio.....	614	973	Ohio.....	9,453	15,472	Clam chowder.....	1,102,838	386,998
Oregon.....	25,223	40,806	Oregon.....	29,641	91,187	Florida.....	11,067	44,300
Pennsylvania.....	92,745	144,958	Washington.....	89,738	257,816	Maine.....	86,771	320,198
Virginia.....	22,656	33,065	All other states.....	3,681	8,305	North Carolina.....	22,600	88,901
Washington.....	33,745	54,912	Strawberries.....	185,919	557,519	All other canned fish.....	87,761	269,901
All other states.....	29,431	46,573	California.....	19,615	56,787	All other states.....	87,761	269,901
Apricots.....	1,051,816	3,060,626	Maryland.....	63,878	188,001	SMOKED AND DRIED FISH.		
California.....	1,005,234	2,963,672	Michigan.....	23,940	64,117	<i>Pounds.</i>		
Utah.....	46,496	96,768	New Jersey.....	4,050	8,850	Total.....	28,713,806	2,759,341
All other states.....	86	186	New York.....	39,490	127,573	Finnan haddie.....	4,095,693	327,877
Blackberries.....	452,161	788,614	Oregon.....	15,194	55,692	Maine.....	1,055,243	102,474
Arkansas.....	6,032	9,695	Washington.....	17,564	50,769	Massachusetts.....	2,388,200	106,224
California.....	142,138	277,569	All other states.....	2,188	5,730	All other states.....	652,250	59,179
Maryland.....	28,297	45,456	Other canned fruits.....	86,850	356,032	Herring.....	11,504,126	719,640
Michigan.....	9,624	22,981	California.....	34,856	168,497	Maine.....	3,797,262	237,703
New Jersey.....	21,552	43,665	Oregon.....	34,648	130,688	Massachusetts.....	4,759,633	210,404
New York.....	3,258	12,183	Washington.....	7,773	31,952	New York.....	1,391,906	165,728
North Carolina.....	80,343	102,888	All other states.....	9,573	24,945	Pennsylvania.....	721,500	47,450
Ohio.....	6,672	13,011	DRIED FRUITS.....			All other states.....	833,825	58,355
Tennessee.....	29,899	40,407	Apples.....	<i>Pounds.</i> 54,957,003	2,889,406	Salmon.....	4,248,896	638,975
Texas.....	6,478	10,160	Arkansas.....	4,294,096	194,727	New Jersey.....	1,800,000	25,200
Virginia.....	10,140	12,736	California.....	10,786,714	663,673	New York.....	2,478,110	442,243
Washington.....	93,768	176,177	Illinois.....	712,250	41,752	Washington.....	1,231,193	123,217
All other states.....	13,960	21,686	Michigan.....	453,000	22,669	All other states.....	359,593	48,315
Blueberries.....	151,636	320,508	New York.....	37,332,053	1,893,015	All other smoked and dried fish.....	8,865,091	1,072,849
Maine.....	116,001	246,504	Pennsylvania.....	220,500	11,267	Illinois.....	141,000	16,700
Maryland.....	8,379	12,645	All other states.....	1,158,390	62,303	Massachusetts.....	624,978	53,188
Michigan.....	6,357	15,734	Apricots.....	39,397,294	3,615,857	New Jersey.....	2,057,667	128,940
Minnesota.....	10,486	19,107	California.....	39,266,294	3,602,690	New York.....	3,266,845	602,370
Vermont.....	9,907	25,713	All other states.....	131,000	13,167	Pennsylvania.....	427,400	44,880
Washington.....	506	805	Peaches.....	61,907,251	2,915,595	Washington.....	872,670	42,353
All other states.....	543,213	1,628,975	All other states.....	531,000	26,633	Wisconsin.....	247,300	25,785
Cherries.....	131,252	459,005	Prunes.....	139,091,887	9,004,348	All other states.....	1,727,231	158,633
California.....	8,835	28,115	California.....	123,580,570	7,956,649	SALTED AND PICKLED FISH.		
Idaho.....	11,959	37,674	Oregon.....	12,621,817	822,837	<i>Total.....</i>		
Maryland.....	31,492	61,686	Washington.....	1,756,000	112,632	131,149,037	8,172,477	
Michigan.....	45,699	142,951	All other states.....	1,127,500	112,030	Cod.....	68,456,917	5,123,562
New York.....	214,265	629,345	Raisins.....	226,043,959	13,938,645	California.....	9,078,983	442,188
Ohio.....	11,801	38,710	California.....	223,712,822	13,681,048	Maine.....	6,804,788	348,741
Oregon.....	43,121	125,925	All other states.....	2,331,137	257,697	Massachusetts.....	45,632,047	3,870,529
Utah.....	17,272	34,946	Raspberries.....	312,986	62,921	Washington.....	5,790,747	247,230
Washington.....	21,022	57,370	New York.....	183,373	36,647	All other states.....	1,350,352	214,874
All other states.....	6,495	13,248	All other states.....	129,613	26,274	Haddock.....	4,947,286	218,359
Figs.....	120,605	159,522	All other dried products.....	2,345,140	2,942,428	Maine.....	738,700	22,256
Louisiana.....	4,655	42,524	California.....	1,942,428	37,880	Massachusetts.....	4,207,186	195,853
Mississippi.....	1,429	6,607	Illinois.....	37,880	259,700	All other states.....	1,400	250
Texas.....	12,969	106,612	New York.....	259,700	37,920	Herring.....	21,133,974	641,003
All other states.....	1,532	3,779	Ohio.....	37,920	67,212	Maryland.....	2,878,940	70,697
Gooseberries.....	89,593	142,876	All other states.....	67,212		Massachusetts.....	3,244,900	68,210
Maryland.....	42,763	55,555	CANNED FISH AND OYSTERS.....			New York.....	4,227,180	274,684
Michigan.....	28,999	51,149	<i>Cases.</i>			Virginia.....	6,543,700	104,066
New York.....	7,684	15,261	Total.....	4,788,104	22,401,004	All other states.....	4,239,254	123,406
Oregon.....	3,459	13,368	Salmon.....	2,151,300	8,712,695	Mackerel.....	6,224,313	519,727
All other states.....	6,688		California.....	40,430	241,335	Massachusetts.....	5,668,258	499,424
Grapes.....	164,205	110,995	Oregon.....	376,492	2,314,771	All other states.....	556,055	20,243
California.....	63,697	110,227	Washington.....	1,096,366	6,156,558	All other salted and pickled fish.....	30,398,547	1,666,226
All other states.....	508	768	All other states.....	12	31	California.....	1,233,081	100,996
Peaches.....	1,340,906	9,585,773	Sardines.....	5,012,199	6,238,933	Maine.....	13,296,802	4,729
Arkansas.....	4,903	9,615	California.....	302,736	308,420	Massachusetts.....	9,018,027	433,935
California.....	2,922,637	8,685,831	Maine.....	4,634,424	5,780,857	New York.....	127,136	16,626
Georgia.....	76,782	124,971	Massachusetts.....	75,027	89,596	Oregon.....	3,672,277	473,458
Maryland.....	201,742	334,070	All other states.....	12	60	Pennsylvania.....	273,000	8,519
Michigan.....	110,391	233,051				Washington.....	2,488,254	206,697
New York.....	9,072	40,338				All other states.....	227,870	11,756
North Carolina.....	9,070	14,386						
Ohio.....	5,615	9,986						
Tennessee.....	8,303	14,620						
Utah.....	20,955	43,399						
Washington.....	6,294	12,046						
All other states.....	32,142	63,460						

1 Standard case contains 24 No. 3 cans. See Table 16.
2 Standard case contains 48 No. 1 cans. See Table 16.

3 Standard case contains 24 No. 2 cans. See Table 16.
4 See Table 16.

5 Standard case contains 48 No. 1 cans. See Table 16.
6 Standard case contains 48 No. 1 cans. See Table 16.

Table 23 shows, for 1914, the values of the several major groups of products and the quantities of most of them, by geographic divisions and states, with the per cent distribution of the total value.

DIVISION AND STATE.	TOTAL VALUE.	Per cent distribution of total value.	CANNED VEGETABLES AND SOUPS.		CANNED FRUITS.		DRIED FRUITS.		CANNED FISH AND OYSTERS.		CURED FISH.		PICKLES, PRESERVES, AND SAUCES.	ALL OTHER PRODUCTS.
			Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Value.	Value.
United States.....	Dollars. 249,791,129	100.0	Cases. ¹ 55,144,772	Dollars. 92,290,724	Cases. ¹ 9,449,182	Dollars. 24,897,174	Pounds. 568,587,364	Dollars. 34,771,912	Cases. ² 8,788,104	Dollars. 22,401,004	Pounds. 159,862,843	Dollars. 10,931,818	Dollars. 60,166,959	Dollars. 4,361,538
New England.....	19,907,905	8.0	1,828,642	3,235,705	195,315	362,449	48,000	4,040	4,916,642	6,522,140	102,225,749	6,068,487	2,815,352	299,675
Maine.....	10,742,462	4.3	1,496,674	2,641,860	171,925	324,107	20,000	1,300	4,831,258	6,390,404	26,664,720	1,167,349	86,117	131,325
New Hampshire.....	71,114	0.0	36,412	65,474	3,333	5,000	610	610						
Vermont.....	498,228	0.2	221,195	382,853	10,733	19,477							5,898	
Massachusetts.....	8,250,135	3.3	6,832	12,016	4,467	7,125	7,000	2,100	85,384	131,736	75,661,029	5,501,138	2,430,679	165,350
Connecticut and Rhode Island.....	435,966	0.2	67,529	133,562	4,857	6,737							292,667	3,000
Middle Atlantic.....	56,752,890	22.7	13,127,565	25,971,140	1,663,849	3,647,933	58,224,934	2,245,682	3,174	32,391	18,013,701	2,096,898	22,377,101	381,745
New York.....	27,537,939	11.0	4,871,675	9,250,245	1,475,949	3,268,339	57,864,734	2,228,673	3,174	32,391	12,918,909	1,722,706	10,685,236	350,349
New Jersey.....	13,795,995	5.5	6,446,302	11,145,270	84,472	210,164	21,600	4,300			3,020,767	215,685	2,193,554	27,022
Pennsylvania.....	15,418,956	6.2	1,809,588	5,575,625	103,428	169,430	338,700	12,709			2,074,025	158,507	9,498,311	4,374
East North Central.....	50,809,728	20.3	18,319,828	27,942,691	514,543	1,075,975	5,575,410	522,527			4,871,847	231,683	20,266,514	770,338
Ohio.....	9,136,268	3.7	2,905,117	4,370,941	37,723	86,756	436,500	37,920			81,170	6,500	4,403,056	231,095
Indiana.....	13,951,211	5.6	6,161,667	8,713,623	1,200	1,917							5,228,527	7,144
Illinois.....	12,034,186	4.8	3,173,461	5,250,532	3,942	9,050	4,571,310	440,214			326,770	38,477	6,283,981	11,932
Michigan.....	8,242,953	3.3	1,857,914	3,017,422	471,678	978,252	498,600	23,005			802,000	78,645	3,755,406	890,223
Wisconsin.....	7,445,110	3.0	4,191,669	6,590,173			81,000	21,388			3,661,907	108,061	595,544	129,944
West North Central.....	8,021,939	3.2	2,902,688	3,851,847	19,055	28,593	313,013	22,302			95,950	1,919	4,103,692	13,586
Minnesota.....	1,437,468	0.6	383,390	525,852	27	97					95,950	1,919	908,270	330
Iowa.....	4,189,203	1.7	1,336,215	2,335,864			233,013	19,802					1,826,395	7,152
Missouri.....	1,329,036	0.5	374,219	582,446	15,613	23,141	80,000	2,500					720,324	625
North and South Dakota and Kansas.....	475,895	0.2	57,887	80,268									395,627	
Nebraska.....	590,337	0.2	250,977	326,427	3,415	5,355							253,076	5,479
South Atlantic.....	26,307,078	10.5	13,384,670	19,517,742	963,464	1,783,678	1,187,400	47,937	813,439	2,255,314	10,082,006	215,141	1,466,854	1,020,412
Delaware.....	3,361,008	1.3	1,889,859	2,763,780	22,033	39,760					91,042	10,323	214,295	832,850
Maryland and District of Columbia.....	18,610,222	7.5	10,105,980	14,814,096	698,889	1,395,136	150,000	4,877	452,909	1,206,668	3,247,540	91,877	688,107	409,461
Virginia.....	2,389,338	1.0	1,218,879	1,699,596	36,917	52,846	753,400	31,810	50,447	174,499	6,543,700	104,606	208,768	117,263
West Virginia.....	351,849	0.1	123,187	164,622	5,819	8,866	284,000	11,250					166,756	825
North Carolina.....	346,836	0.1	31,578	48,544	120,865	155,865			44,560	113,273			6,229	22,975
South Carolina.....	335,567	0.1	7,715	11,433	1,738	4,778			118,841	330,115	29,724	1,535	11,347	4,359
Georgia.....	466,237	0.2	5,335	8,764	76,807	125,011			61,916	188,687			141,028	2,747
Florida.....	417,921	0.2	4,137	6,907	396	1,416			84,766	242,072	170,000	6,800	30,294	130,432
East South Central.....	4,632,404	1.8	523,227	806,469	53,349	82,972			462,084	1,480,721			2,244,034	18,208
Kentucky.....	2,362,958	0.9	135,570	228,585	4,532	6,090							2,126,781	612
Tennessee.....	586,147	0.2	317,048	469,098	42,745	61,547							54,119	1,383
Alabama and Mississippi.....	1,683,299	0.7	70,609	108,786	6,072	14,445			462,084	1,480,721			63,134	16,213
West South Central.....	3,228,157	1.3	299,841	789,162	90,059	252,427	5,535,528	206,884	240,521	881,557	245,000	38,700	1,002,521	56,916
Arkansas.....	579,209	0.2	159,307	273,710	59,758	81,448	5,535,528	206,884						17,167
Louisiana.....	1,374,823	0.6	73,834	168,241	5,373	43,632			240,521	881,557	245,000	38,700	241,273	1,520
Oklahoma and Texas.....	1,274,125	0.5	66,600	347,201	24,923	127,447							761,248	38,229
Mountain.....	4,407,308	1.8	1,891,348	3,206,198	160,949	351,463	265,000	19,000					722,023	108,624
Idaho, New Mexico, Arizona, Montana, and Wyoming.....	169,467	0.1	35,527	61,893	22,961	66,873							40,601	100
Colorado.....	1,807,037	0.7	737,758	1,193,828	31,092	65,381	265,000	19,000					422,304	106,524
Utah.....	2,430,804	1.0	1,118,063	1,950,477	106,896	219,209							269,118	2,000
Pacific.....	75,723,720	30.3	2,866,963	6,969,720	5,788,599	17,311,687	497,438,079	31,703,540	2,352,244	11,228,881	24,328,590	1,678,990	5,138,868	1,692,034
Washington.....	9,452,724	3.8	52,239	86,802	326,723	762,175	1,806,313	117,338	1,152,325	6,406,955	9,957,829	623,569	606,071	849,814
Oregon.....	4,742,782	1.9	15,391	27,863	189,277	555,393	12,832,689	850,832	390,554	2,396,075	3,878,197	495,925	256,552	190,122
California.....	61,528,214	24.6	2,799,333	6,855,055	5,275,599	15,994,119	482,749,077	30,735,350	809,365	2,455,851	10,492,564	559,496	4,276,245	652,098

¹ Standard case of soups contains 48 No. 1 cans; standard case of tomato pulp contains 12 No. 10 cans; standard cases of other vegetables and fruits contain 24 No. 2 or No. 3 cans. See Tables 16 and 19.
² See Tables 16 and 22.

Among the geographic divisions, the Pacific states led, in 1914, with 30.3 per cent of the total value of products; the Middle Atlantic group ranked second, with 22.7 per cent; and the East North Central occupied third place, with 20.3 per cent. These three geographic divisions together thus reported 73.3 per cent of the total value of products for the United States as a whole.

DETAIL STATE TABLES.

Table 24 shows, for 1914, 1909, and 1904, by states, the number of establishments, average number of wage earners, primary horsepower, wages, cost of materials, and value of products as reported for the

canning and preserving industry. Table 25 presents for 1914, by states, the more detailed statistics for the combined industry and for each of the four branches, separately.

TABLE 24.—COMPARATIVE SUMMARY FOR 1914, 1909, AND 1904.

STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earners (aver- age num- ber).	Pri- mary horse- power.	Expressed in thousands.		
					Wages.	Cost of mate- rials.	Value of prod- ucts.
United States.....	1914	4,220	74,071	120,004	\$27,197	\$159,658	\$243,440
	1909	3,767	59,968	81,179	19,082	101,823	157,101
	1904	3,168	56,944	60,831	16,336	83,147	130,466
Arkansas.....	1914	63	454	587	116	347	579
	1909	44	292	428	54	181	279
	1904	67	194	202	38	104	180
California.....	1914	289	12,756	10,592	5,486	45,695	61,163
	1909	196	7,787	7,453	3,454	24,009	32,915
	1904	236	7,739	4,635	2,800	18,655	26,083
Colorado.....	1914	26	684	1,453	287	1,090	1,798
	1909	30	518	1,349	250	672	1,528
	1904	15	315	641	136	429	821
Connecticut.....	1914	15	147	360	53	203	359
	1909	12	128	199	45	175	346
	1904	12	129	254	42	86	180
Delaware.....	1914	97	1,803	2,993	460	2,252	3,175
	1909	77	1,369	1,725	273	1,553	2,106
	1904	59	999	1,274	187	1,031	1,456
Florida.....	1914	21	194	268	58	239	418
	1909	18	188	70	51	80	213
	1904	10	184	56	28	92	165
Georgia.....	1914	17	447	576	69	261	446
	1909	26	428	318	56	198	321
	1904	9	579	.....	55	160	270
Illinois.....	1914	117	2,560	7,078	1,108	6,680	10,121
	1909	118	2,383	4,305	904	4,813	7,620
	1904	125	2,146	2,630	827	4,316	7,044
Indiana.....	1914	141	4,422	7,208	1,574	8,813	13,866
	1909	134	3,406	6,398	879	5,945	8,758
	1904	110	3,426	4,738	862	3,574	5,894
Iowa.....	1914	64	1,209	4,400	438	2,122	3,920
	1909	71	1,247	2,989	299	1,568	2,549
	1904	59	1,607	2,316	418	2,118	3,675
Kansas.....	1914	5	71	188	33	298	393
	1909	8	120	170	46	185	286
	1904	4	100	103	22	51	90
Kentucky.....	1914	33	594	843	190	1,387	2,266
	1909	36	653	907	177	1,093	1,857
	1904	16	520	591	101	706	1,096
Louisiana.....	1914	28	991	710	177	663	1,365
	1909	26	974	659	183	573	978
	1904	19	614	344	144	636	1,173
Maine.....	1914	194	3,913	6,287	1,263	7,404	10,743
	1909	245	3,850	4,355	1,138	5,125	7,689
	1904	235	3,487	3,018	1,305	4,240	7,267
Maryland.....	1914	465	8,640	10,698	2,402	12,658	18,029
	1909	468	8,613	7,007	1,926	10,090	13,709
	1904	408	9,146	5,799	1,790	9,173	12,935
Massachusetts.....	1914	65	1,903	996	866	5,606	8,169
	1909	71	1,449	1,043	642	4,583	6,840
	1904	85	1,342	570	572	4,815	6,574
Michigan.....	1914	91	2,507	4,791	944	4,893	8,194
	1909	104	2,073	3,374	665	3,074	4,971
	1904	134	2,022	2,636	521	2,374	3,817
Minnesota.....	1914	35	436	1,055	140	806	1,284
	1909	32	415	692	135	895	1,343
	1904	31	263	540	89	435	778
Mississippi.....	1914	18	1,052	600	\$229	\$877	\$1,655
	1909	11	847	378	97	508	824
	1904	11	757	550	172	1,032	1,566
Missouri.....	1914	153	850	1,012	142	749	1,082
	1909	222	952	974	196	1,005	1,574
	1904	75	758	1,154	171	849	1,323
Nebraska.....	1914	17	244	1,329	73	392	590
	1909	12	215	569	63	269	481
	1904	8	292	378	62	309	559
New Jersey.....	1914	96	3,154	3,783	1,252	8,035	13,765
	1909	84	1,818	2,698	546	2,208	3,664
	1904	76	1,700	2,076	399	1,791	2,693
New York.....	1914	987	8,757	16,630	3,801	15,957	25,945
	1909	790	7,075	12,469	2,563	11,669	19,049
	1904	666	7,796	9,741	2,409	9,829	16,521
North Carolina.....	1914	27	351	292	65	175	347
	1909	21	188	230	25	75	144
	1904	23	199	223	30	153	222
Ohio.....	1914	136	2,509	7,079	947	5,902	8,958
	1909	107	2,009	4,244	532	3,192	4,699
	1904	107	2,144	3,580	577	2,791	4,491
Oregon.....	1914	71	799	1,655	339	3,090	4,738
	1909	71	691	1,318	315	2,187	3,297
	1904	45	529	1,247	250	1,894	2,911
Pennsylvania.....	1914	84	3,096	4,476	1,264	7,539	14,950
	1909	83	2,753	3,474	947	4,665	9,484
	1904	89	2,215	2,994	762	4,033	8,065
South Carolina.....	1914	18	485	407	78	269	364
	1909	15	467	95	64	159	318
	1904	14	1,044	287	112	349	574
Tennessee.....	1914	162	381	738	62	261	496
	1909	37	303	450	39	131	206
	1904	16	203	360	30	151	242
Texas.....	1914	22	213	423	79	630	1,211
	1909	19	158	243	45	201	498
	1904	20	119	227	23	208	332
Utah.....	1914	37	677	1,930	297	1,669	2,430
	1909	24	396	847	123	716	1,069
	1904	18	369	500	99	506	892
Vermont.....	1914	6	95	296	23	228	402
	1909	8	118	240	46	214	350
	1904	7	57	124	17	63	123
Virginia.....	1914	441	2,074	3,861	330	1,573	2,234
	1909	325	1,860	1,382	277	1,298	1,854
	1904	170	1,071	1,048	181	1,218	1,218
Washington.....	1914	86	2,352	4,565	1,322	5,279	9,450
	1909	80	2,029	2,433	1,272	5,046	9,595
	1904	61	689	1,491	380	2,351	3,617
West Virginia.....	1914	29	216	552	44	264	351
	1909	30	271	434	58	430	605
	1904	19	327	424	84	387	764
Wisconsin.....	1914	112	2,687	8,730	1,064	4,570	7,335
	1909	83	1,776	4,915	639	2,967	4,807
	1904	59	1,311	2,962	426	2,012	3,291
All other states.....	1914	52	348	593	112	466	849
	1909	29	209	295	68	251	443
	1904	47	552	818	215	823	1,414

* Excluding statistics for 1 establishment to avoid disclosure of individual operations.

* Excluding statistics for 3 establishments to avoid disclosure of individual operations.

* Excluding statistics for 2 establishments to avoid disclosure of individual operations.

MANUFACTURES.

TABLE 25.—DETAILED STATISTICS FOR CANNING

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.									WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.	Female.	
								Maximum month.	Minimum month.						

ALL BRANCHES COMBINED.

1	United States.....	4,220	88,069	4,409	3,131	5,096	1,362	74,071	Se 185,724	Ja 27,917	201,700	91,053	101,766	3,435	5,446	\$172,474,945
2	Arizona.....	4	17	6	2	2	2	9	De 21	Au 2	21	19	2	2	2	22,156
3	Arkansas.....	63	586	99	19	10	4	454	Se 1,671	Ap 2	1,710	530	1,036	21	123	297,698
4	California.....	259	14,287	321	386	632	192	12,756	Au 27,073	Ja 4,137	33,082	13,138	18,157	453	1,334	29,207,048
5	Colorado.....	26	764	11	26	31	12	684	Au 1,645	Ja 171	1,934	990	929	5	10	1,894,768
6	Connecticut.....	15	187	12	7	11	10	147	Se 385	Ja 58	244	126	117	1	1	330,838
7	Delaware.....	97	2,017	110	81	38	5	1,803	Se 8,988	My 127	8,582	2,895	5,083	246	358	2,510,050
8	Florida.....	21	249	16	9	28	2	194	De 415	My 77	575	315	206	24	30	265,956
9	Georgia.....	17	498	14	17	18	2	447	Jy 683	My 54	1,301	480	720	43	58	293,877
10	Idaho.....	5	78	2	4	2	2	70	Je 218	Ap 2	312	67	220	2	23	73,891
11	Illinois.....	117	3,058	79	160	198	61	2,660	Se 5,785	Fe 1,307	5,971	3,807	2,047	13	44	7,890,948
12	Indiana.....	141	4,985	84	162	232	85	4,422	Se 13,440	Fe 1,531	11,702	5,522	5,995	63	122	7,755,275
13	Iowa.....	64	1,407	46	89	42	21	1,209	Au 4,779	Mh 344	3,643	2,043	1,519	43	38	4,645,349
14	Kansas.....	5	100	2	8	14	5	71	Oc 91	Ja 58	59	38	21	1	1	330,904
15	Kentucky.....	33	779	23	41	101	20	594	Se 1,541	Ja 241	1,291	671	613	7	7	1,631,799
16	Louisiana.....	28	1,150	74	39	40	6	991	Oc 1,455	Je 369	1,824	621	1,189	4	10	1,006,516
17	Maine.....	194	4,488	230	212	79	54	3,913	Se 11,762	Fe 822	11,783	6,781	4,663	166	173	6,818,532
18	Maryland.....	465	9,850	604	242	289	75	8,640	Se 31,347	Mh 2,029	31,136	11,160	18,055	859	1,062	10,719,320
19	Massachusetts.....	65	2,294	49	74	192	70	1,903	Oc 2,150	My 1,638	1,980	1,451	450	25	24	5,038,118
20	Michigan.....	91	2,871	60	100	148	56	2,567	Se 5,823	Fe 965	4,698	2,048	2,607	2	42	6,436,209
21	Minnesota.....	35	618	20	34	23	5	436	Se 1,354	Mh 96	1,382	836	532	11	3	1,078,894
22	Mississippi.....	18	1,102	6	22	19	3	1,052	Oc 1,799	Je 124	1,856	716	1,029	50	61	710,109
23	Missouri.....	153	1,117	183	32	40	12	850	Se 8,609	De 63	3,006	1,109	2,303	63	131	595,641
24	Montana.....	3	8	3	3	3	1	5	Se 8	Ap 2	4	4	2	1	1	14,650
25	Nebraska.....	17	291	13	14	19	1	244	Au 1,233	Ja 38	869	532	359	8	8	582,596
26	New Hampshire.....	4	29	1	4	1	1	24	Se 145	Ja 11	153	111	42	1	1	47,722
27	New Jersey.....	96	3,686	74	88	316	54	3,154	Se 8,092	Ja 1,592	6,758	3,214	3,506	15	18	10,728,619
28	New York.....	957	10,787	1,070	335	476	149	8,757	Oc 18,768	Fe 2,541	22,298	9,834	12,345	53	66	19,490,651
29	North Carolina.....	7	890	29	7	3	1	662	No 405	Fe 114	662	416	200	21	25	180,400
30	Ohio.....	136	2,964	100	135	161	59	2,509	Se 7,739	Fe 993	6,785	3,943	2,802	25	15	6,870,098
31	Oklahoma.....	3	18	1	2	1	1	15	Au 88	Ja 0	91	10	81	1	1	7,635
32	Oregon.....	71	1,035	34	75	107	20	799	Oc 1,495	Mh 246	2,121	1,054	1,024	6	37	4,776,434
33	Pennsylvania.....	84	5,033	98	119	1,439	281	3,096	Se 4,848	Ja 2,203	4,026	1,855	1,945	70	150	12,383,829
34	Rhode Island.....	8	26	6	2	3	1	14	De 19	Ap 7	24	17	7	1	1	31,516
35	South Carolina.....	18	515	16	9	3	2	485	De 984	Ja 47	1,028	428	501	44	55	224,686
36	Tennessee.....	62	496	92	15	6	2	381	Se 1,394	Ja 28	1,412	415	891	60	46	297,426
37	Texas.....	22	338	10	29	79	7	213	Au 421	My 152	490	268	214	5	3	828,209
38	Utah.....	37	781	6	50	42	6	677	Se 2,286	Ja 97	2,353	827	1,247	102	177	2,313,137
39	Vermont.....	6	113	6	8	4	1	95	Se 565	Ja 5	540	345	191	4	1	297,806
40	Virginia.....	441	2,833	662	73	17	7	2,074	Se 8,907	Ja 79	9,612	3,043	5,035	566	968	1,972,494
41	Washington.....	86	2,663	35	138	135	3	2,352	Au 4,271	Ja 517	4,776	3,506	1,177	42	51	12,843,706
42	West Virginia.....	20	277	43	8	9	1	216	Oc 924	Fe 25	955	240	583	27	105	299,839
43	Wisconsin.....	112	3,091	39	260	73	32	2,687	Jy 9,124	Fe 699	7,528	5,247	1,936	259	84	8,464,010
44	All other states.....	25	263	20	16	15	1	211			499	291	187	21	1	289,451

CANNING AND PRESERVING, FRUITS AND VEGETABLES.

1	United States.....	3,153	58,329	3,520	2,007	1,903	574	50,325	Se 150,735	Fe 10,345	165,109	70,646	86,306	3,118	5,039	\$98,738,219
2	Alabama.....	4	26	5	1	1	1	20	Au 69	Ja 0	94	44	50	1	1	7,710
3	Arkansas.....	63	586	99	19	10	4	454	Se 1,671	Ap 2	1,710	530	1,036	21	123	297,698
4	California.....	205	12,221	256	280	501	155	11,029	Au 24,233	Fe 2,705	29,767	11,478	16,518	451	1,320	23,004,755
5	Colorado.....	15	616	1	15	17	5	578	Au 1,509	Ja 92	1,809	916	878	5	10	1,522,099
6	Delaware.....	94	2,011	107	61	38	5	1,800	Se 8,986	My 124	8,579	2,892	5,083	246	358	2,505,150
7	Florida.....	3	31	2	3	2	2	24	Jy 65	Ja 0	73	20	38	7	10	8,907
8	Georgia.....	10	128	10	5	2	2	113	Jy 633	Mh 0	655	214	350	40	51	89,724
9	Idaho.....	5	78	2	4	2	2	70	Je 218	Ap 2	312	67	220	2	23	73,891
10	Illinois.....	51	1,560	30	90	65	16	1,359	Se 3,933	Fe 354	4,238	2,976	1,255	3	4	4,230,272
11	Indiana.....	119	3,502	74	131	59	40	3,198	Se 9,933	Fe 908	8,764	3,848	4,731	63	122	4,777,700
12	Iowa.....	47	1,035	34	71	13	13	904	Au 4,351	Fe 93	3,399	1,888	1,434	42	35	3,422,945
13	Kentucky.....	24	289	21	16	5	3	244	Se 1,060	Ja 4	912	484	421	7	7	260,800
14	Maine.....	76	1,272	121	99	22	13	1,017	Se 6,623	Fe 54	6,385	4,179	1,900	146	160	1,949,623
15	Maryland.....	423	9,469	550	235	258	72	8,354	Se 31,238	Mh 1,934	29,507	10,101	17,525	822	1,059	10,369,805
16	Massachusetts.....	4	23	7	1	1	1	15	Oc 67	Ja 0	49	28	21	1	1	28,058
17	Michigan.....	49	1,851	27	51	63	23	1,687	Se 4,106	Ja 288	3,782	1,607	2,157	2	16	2,691,738
18	Minnesota.....	22	359	8	27	5	2	317	Se 1,173	Ja 8	1,279	767	498	11	3	550,333
19	Mississippi.....	5	88	2	8	1	1	82	No 290	Fe 4	297	155	130	7	5	71,639
20	Missouri.....	142	990	173	23	12	2	780	Se 3,597	Ja 0	3,531	1,067	2,274	62	128	456,830

1 Owned power only.

2 Includes rented power, other than electric.

3 Same number reported for one or more other months.

4 None reported for one or more other months.

CANNING AND PRESERVING.

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AND PRESERVING, BY STATES: 1914.

EXPENSES.							Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.			Primary horsepower.					
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.			Fuel and rent of power.	Total.	Steam engines. ¹	Internal-combustion engines. ²	Water wheels and motors. ¹	Electric (rented). ³	Electric horsepower generated in establishments reporting.

ALL BRANCHES COMBINED.

\$5,287,594	\$6,183,660	\$27,197,024	\$840,419	\$965,478	\$1,033,568	\$157,491,509	\$2,166,400	\$243,439,859	\$83,781,950	120,004	90,778	9,623	877	18,726	9,712	1
10,657	2,977	5,543	500	2,068	300	5,676	297	21,461	15,488	33	31	2	2	2	2	2
855,305	887,734	5,485,728	321,126	104,803	169,822	330,922	15,603	579,209	232,684	587	360	174	53	3	3	3
47,791	35,403	287,125	275	14,001	10,127	1,071,506	18,158	61,162,549	15,468,512	10,592	5,057	487	70	4,978	195	4
13,740	16,965	52,647	556	10,040	968	198,867	4,263	1,798,129	708,465	1,453	1,159	134	5	155	2	5
57,063	29,953	459,748	1,479	4,956	5,247	2,218,370	33,764	358,601	155,471	360	344	10	6	2	6	6
13,214	39,903	58,312	4,693	4,785	1,806	417,921	4,124	3,174,821	922,687	2,993	2,894	99	10	7	7	7
22,450	12,115	69,383	105	5,061	1,374	254,842	0,678	417,921	178,477	268	215	43	10	8	8	8
3,658	638	17,218	105	760	286	87,571	1,479	445,589	184,099	576	312	247	12	5	4	9
317,452	249,565	1,107,857	60,269	77,572	40,626	6,587,819	92,596	125,623	66,573	181	110	21	21	10	10	10
210,299	355,537	1,574,274	1,584	7,047	42,255	8,088,228	120,005	10,121,497	3,441,082	7,078	3,998	238	2,842	652	11	11
115,931	61,119	437,864	4,814	25,789	2,084,245	37,780	3,919,955	13,866,383	5,048,150	7,208	6,129	105	974	1,450	12	12
11,800	18,456	33,095	420	2,253	292,792	5,271	993,127	1,797,930	4,400	2,742	195	188	11	14	14	14
57,559	123,081	190,180	1,800	10,719	7,870	1,350,620	10,141	2,265,958	899,197	843	747	3	93	70	15	15
40,689	31,525	177,309	2,699	4,626	6,581	647,036	14,890	1,865,267	702,741	710	519	168	23	16	16	16
274,088	98,442	1,263,202	11,492	54,506	39,397	7,295,592	108,322	10,742,738	3,338,824	6,257	5,122	668	310	157	442	17
270,241	217,375	2,401,688	8,579	86,521	76,253	12,806,418	157,136	18,028,779	5,071,225	10,698	9,912	473	313	266	18	18
191,061	262,933	806,327	8,150	67,904	40,430	5,564,778	40,963	8,169,014	2,553,273	996	416	181	449	112	19	19
163,729	168,794	943,799	3,350	41,653	9,204	4,816,868	75,717	8,194,225	3,301,640	4,791	3,929	291	571	99	20	20
47,701	26,818	140,071	1,360	7,248	5,167	789,864	16,188	1,284,340	478,288	1,055	787	87	181	21	21	21
30,990	15,475	229,416	156	5,874	854,471	22,724	9,755	1,654,772	777,577	600	591	4	5	22	22	22
24,199	22,913	141,806	849	7,350	2,360	7,006,216	9,755	1,081,690	341,618	1,012	843	130	29	23	23	23
12,210	19,048	72,559	35	258	47	13,309	358	19,670	6,005	10	10	10	10	24	24	24
3,659	8,692	8,692	250	3,000	2,915	383,118	8,458	590,162	188,586	1,829	1,257	43	29	112	25	25
370,377	442,243	1,251,693	4,249	26,275	47,532	7,948,395	86,131	13,764,955	5,730,429	3,783	3,444	171	1	167	1,599	26
608,201	634,183	3,801,161	10,790	163,677	109,017	15,506,527	450,833	25,944,634	9,937,274	16,630	9,817	3,007	350	3,456	1,523	28
6,133	300	65,297	52,333	360	1,216	171,030	8,525	846,886	172,831	292	288	4	29	288	29	29
201,271	233,483	946,987	2,221	20,380	37,287	5,826,995	75,354	8,957,883	3,055,834	7,079	6,107	609	363	568	30	30
280	2,752	2,752	65	4,117	107	4,117	107	10,708	6,484	51	51	51	51	31	31	31
110,909	108,141	339,474	119,217	25,947	38,824	3,048,969	41,451	4,738,067	1,647,647	1,655	1,260	60	3	332	4	32
334,959	1,691,597	1,263,874	3,008	34,281	47,419	7,454,055	85,370	14,949,551	7,410,126	4,476	3,960	143	60	313	1,694	33
1,010	901	8,746	1,563	167	64,249	996	77,365	22,120	77,365	19	19	19	19	34	34	34
10,810	1,295	77,751	1,010	795	3,003	201,051	8,160	368,567	154,356	407	357	50	50	35	35	35
7,716	4,525	61,785	926	1,226	356,459	4,487	496,225	496,225	185,279	738	717	21	21	36	36	36
35,838	72,065	78,805	1,088	3,553	3,852	619,471	10,868	1,210,999	580,630	423	315	13	95	23	37	37
17,665	43,176	296,964	3,600	2,059	11,093	1,645,864	23,447	2,429,804	780,493	1,930	1,545	4	385	43	38	38
9,065	4,627	32,877	1,197	1,120	1,351	224,797	3,029	402,330	174,504	296	227	4	63	39	39	39
43,368	7,527	329,626	500	9,860	6,417	1,544,083	29,213	2,234,408	661,112	3,861	3,647	145	25	44	40	40
282,148	158,734	1,322,225	193,954	32,979	123,864	5,151,399	127,412	9,449,549	4,170,738	4,585	2,940	641	20	964	115	41
8,180	5,535	44,023	150	2,234	1,363	258,242	5,450	87,762	87,762	552	465	58	29	10	42	42
307,394	70,428	1,063,703	10,429	49,954	70,489	4,489,156	81,151	7,335,838	2,765,051	8,730	6,732	921	6	1,048	170	43
16,745	7,411	69,376	1,075	1,460	1,161	288,715	3,144	525,333	233,674	284	201	2	15	66	44	44

CANNING AND PRESERVING, FRUITS AND VEGETABLES.

\$2,976,624	\$2,130,163	\$17,305,503	\$422,514	\$336,032	\$542,126	\$101,912,460	\$1,380,584	\$149,175,865	\$45,882,821	88,303	69,520	6,373	509	11,811	4,447	1
120	2,977	2,460	25	2,068	15	8,007	30	13,516	5,479	587	360	174	53	3	3	2
10,657	2,977	116,468	1,771	2,068	925	330,922	15,603	579,209	232,684	587	360	174	53	3	3	3
654,223	683,021	4,714,436	283,904	76,897	121,312	41,633,504	270,059	54,425,007	12,521,444	8,341	4,134	207	4,000	66	4	4
28,061	15,577	227,891	275	10,123	7,205	841,239	15,389	1,412,126	555,498	1,320	1,047	134	139	2	5	5
57,063	29,953	458,668	1,479	4,836	5,217	2,211,448	33,649	3,184,348	919,251	2,993	2,894	99	10	7	7	7
2,014	520	1,633	600	14	4,077	80	8,325	4,168	4,168	33	30	3	3	8	8	8
5,061	18,008	250	447	1,088	5,217	1,088	133,775	44,409	44,409	216	200	4	12	9	9	9
3,658	638	17,218	105	760	286	87,571	1,479	125,623	66,573	131	110	21	21	10	10	10
167,547	59,757	564,769	20,219	14,827	20,158	2,994,886	51,558	4,557,963	1,511,221	4,061	3,026	160	875	196	10	10
144,921	81,945	992,911	1,290	1,597	27,206	5,792,568	76,456	8,376,249	2,507,225	5,663	4,869	90	704	954	11	11
86,858	14,480	293,321	4,617	18,544	1,215,179	24,796	2,077,242	837,267	837,267	3,876	3,361	101	414	204	12	12
4,511	1,603	42,359	75	674	15,121	3,887	238,806	89,798	414	335	335	4	79	13	13	13
104,375	29,684	270,620	9,260	9,205	13,619	1,887,874	18,678	2,825,252	918,700	2,522	2,212	102	200	8	14	14
266,093	200,428	2,321,019	8,226	79,469	73,799	12,461,184	152,139	17,499,730	4,806,405	10,256	9,602	374	280	236	15	15
75	2,695	2,695	150	120	12,866	346	20,630	7,418	7,418	50	40	8	2	16	16	16
70,450	59,131	533,183	2,470	3,306	16,254	2,594,561	45,681	4,421,946	1,781,704	3,712	3,285	190	237	35	17	17
25,201	3,280	75,641	1,360	5,212	2,425	110,495	11,786	527,399	205,118	947	752	75	120	18	18	18
2,880	90	16,417	6	243	47,350	1,152	73,780	25,278	25,278	236	227	4	5	1	1	1
6,559	1,840	106,874	840	2,442	1,615	394,646	8,111	603,725	206,968	965	823	123	14	2	2	2

¹ All other states embrace: Alabama, 6 establishments; District of Columbia, 2; Delaware, 3; Kansas, 2; New Mexico, 1; North Dakota, 2; Pennsylvania, 2; South Dakota, 2; Tennessee, 1; Vermont, 2; and Virginia, 2.

MANUFACTURES.

TABLE 25.—DETAILED STATISTICS FOR CANNING

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.										WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.				Total.	16 and over.		Under 16.		
					Male.	Female.	Average number.	Number, 15th day of—		Male.		Female.	Male.	Female.		
								Maximum month.	Minimum month.							

CANNING AND PRESERVING, FRUITS AND VEGETABLES—Continued.

1	Nebraska.....	14	232	9	13	1	209	Au 1,188	Ja 8	868	514	346	8	\$394,116
2	New Hampshire.....	4	29	1	4	—	24	Se 145	Ja 0	153	111	42	—	47,722
3	New Jersey.....	52	3,119	34	67	289	43	Se 6,902	Ja 1,318	6,288	2,932	3,341	0	8,974,203
4	New York.....	864	7,959	959	234	242	85	Oc 15,662	Fe 714	19,876	8,608	11,152	50	13,318,625
5	North Carolina.....	21	112	22	7	3	80	Au 300	Ja 0	319	94	182	20	112,639
6	Ohio.....	96	1,936	78	88	85	33	Se 6,385	Fe 305	6,005	3,579	2,387	24	4,234,478
7	Oklahoma.....	3	18	1	2	—	15	Au 88	Ja 0	91	10	81	—	7,635
8	Oregon.....	37	497	24	28	19	9	Oc 970	Ap 52	1,450	486	922	5	737,313
9	Pennsylvania.....	35	613	47	23	8	7	Se 1,741	Fe 48	1,730	670	910	67	1,051,675
10	South Carolina.....	4	31	5	1	—	25	Au 56	Mh 8	54	21	30	3	17,817
11	Tennessee.....	62	496	92	15	6	2	Se 1,394	Ja 28	1,412	415	891	60	297,426
12	Texas.....	12	169	5	14	49	2	Au 254	My 48	339	178	158	3	411,469
13	Utah.....	31	716	2	46	28	6	Se 2,227	Fe 62	2,313	809	1,225	102	2,081,767
14	Vermont.....	6	113	6	8	4	—	Se 565	Ja 5	540	345	191	4	297,806
15	Virginia.....	412	2,492	642	48	7	2	Se 8,541	Ja 16	8,921	2,660	4,785	518	1,507,396
16	Washington.....	18	420	11	19	21	2	Au 934	Ja 6	1,108	557	535	5	567,640
17	West Virginia.....	26	225	43	3	1	—	Oc 855	Ja 0	892	209	551	27	138,992
18	Wisconsin.....	81	2,858	4	241	65	27	Jy 8,997	Fe 568	7,170	4,998	1,831	259	7,972,388
19	All other states ¹	14	159	8	12	2	2	135	—	438	189	229	20	247,405

CANNING AND PRESERVING, FISH.

1	United States.....	330	10,306	263	388	434	152	9,069	Au 14,629	Ja 4,033	16,752	10,297	6,147	187	121	\$28,463,738
2	California.....	23	839	3	48	27	14	747	Au 1,963	Ja 100	1,768	982	786	—	—	2,118,170
3	Delaware.....	3	6	3	—	—	—	3	Fe 4	Se 2	3	—	—	—	—	4,900
4	Florida.....	4	67	2	1	3	—	61	Oc 244	Jy 2	241	136	68	17	20	45,325
5	Illinois.....	3	12	3	—	—	—	9	(*) 9	(*) 9	9	9	—	—	—	6,542
6	Louisiana.....	10	593	54	12	9	1	517	Au 848	Ja 117	975	384	587	—	4	327,941
7	Maine.....	95	3,048	79	106	56	41	2,766	Oc 5,083	Mh 699	5,070	2,468	2,599	20	13	4,712,478
8	Maryland.....	19	174	30	—	4	2	138	Ap 845	Ja 0	911	771	124	15	1	132,270
9	Massachusetts.....	31	1,788	22	45	127	59	1,535	Oc 1,730	My 1,301	1,578	1,249	281	24	24	4,004,598
10	Mississippi.....	10	819	2	14	10	2	791	Oc 1,283	My 60	1,281	463	761	26	31	489,403
11	New Jersey.....	3	25	3	—	1	—	21	Ja 32	Jy 14	27	26	1	—	—	45,300
12	New York.....	16	182	9	14	15	5	139	Mh 154	Je 128	147	115	31	1	—	602,398
13	Oregon.....	25	425	3	40	73	8	301	Jy 535	Fe 80	578	522	55	1	—	3,850,595
14	Virginia.....	19	244	14	11	7	1	211	Ap 561	Fe 0	577	341	186	40	10	339,742
15	Washington.....	48	1,927	17	89	89	17	1,715	Au 3,215	Ja 385	3,102	2,547	503	37	15	11,525,141
16	Wisconsin.....	10	51	9	5	2	2	33	No 176	Ja 1	166	166	—	—	—	133,613
17	All other states ²	11	106	10	3	11	—	82	—	—	319	115	195	6	3	127,322

CANNING AND PRESERVING, OYSTERS.

1	United States.....	65	2,296	60	62	66	21	2,087	No 3,406	Jy 266	3,886	2,020	1,718	56	92	\$2,076,607
2	California.....	3	93	1	5	3	—	84	Se 101	De 65	92	90	2	—	—	756,156
3	Florida.....	4	132	1	5	23	2	101	Ja 173	Jy 18	237	142	95	—	—	149,195
4	Georgia.....	3	263	4	4	7	1	247	Mh 368	Je 0	367	172	185	3	7	59,822
5	Maine.....	16	151	26	6	—	—	119	Ap 306	Jy 3	316	126	190	—	—	69,721
6	Maryland.....	3	61	3	2	2	—	54	No 145	My 10	122	72	50	—	—	28,600
7	Oregon.....	5	35	4	2	—	—	29	My 51	Ja 7	41	21	20	—	—	20,501
8	South Carolina.....	12	460	10	7	3	1	439	De 939	Je 0	939	400	449	36	54	199,236
9	Washington.....	8	216	3	14	11	12	176	No 329	Jy 21	434	348	86	—	—	314,894
10	All other states ³	11	885	8	17	17	5	838	—	—	1,338	649	641	17	31	478,482

¹ Owned power only.² Includes rented power, other than electric.³ None reported for one or more other months.⁴ Same number reported for one or more other months.

CANNING AND PRESERVING.

389

AND PRESERVING, BY STATES: 1914—Continued.

EXPENSES.							Value of products.	Value added by manufacture.	POWER.						
Salaries and wages.			For contract work.	Rent and taxes.		For materials.			Primary horsepower.					Electric horsepower generated in establishments reporting.	
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.			Fuel and rent of power.	Total.	Steam engines. ¹	Internal combustion engines. ²	Water wheels and motors. ¹		Electric (rented).

CANNING AND PRESERVING, FRUITS AND VEGETABLES—Continued.

\$11,910	\$1,200	\$53,478	-----	\$2,700	\$2,046	\$184,292	\$4,217	\$337,261	\$148,752	1,247	1,187	39	-----	21	112	1
3,650	-----	8,692	-----	250	386	35,636	798	68,914	32,480	65	65	-----	-----	12	966	2
333,053	402,497	1,028,216	\$3,231	14,720	40,916	6,495,234	57,947	11,366,906	4,813,725	2,944	2,781	150	1	-----	-----	3
388,308	261,419	2,654,838	15,832	19,570	69,851	8,303,482	367,854	14,858,087	6,186,751	14,575	8,860	2,693	350	2,672	1,225	4
4,333	300	12,605	51,833	135	812	99,719	810	194,583	94,054	139	136	3	-----	-----	-----	5
108,151	113,363	576,783	544	11,314	22,487	3,080,735	44,067	4,729,692	1,604,890	4,979	4,170	543	-----	266	173	6
2,280	-----	2,752	-----	65	4,117	4,117	107	6,484	51	51	51	-----	-----	-----	-----	7
26,564	10,648	131,764	254	7,076	5,982	1,047,425	10,734	1,552,077	493,918	567	403	5	-----	159	-----	8
28,661	8,067	133,358	2,022	608	1,673	749,455	10,239	1,119,963	360,269	1,234	1,128	51	6	49	54	9
390	-----	3,253	-----	78	6,346	6,346	185	14,171	7,640	40	40	-----	-----	-----	-----	10
7,716	4,525	61,785	926	912	1,226	356,459	4,487	496,225	135,279	738	717	21	-----	-----	-----	11
14,100	25,727	37,271	400	2,905	1,235	224,271	7,457	517,901	286,173	285	230	13	-----	42	23	12
64,745	28,056	279,316	3,600	1,899	9,477	1,487,588	20,816	2,201,714	693,310	1,805	1,430	-----	-----	375	41	13
9,095	4,627	32,877	1,197	1,120	1,351	224,767	3,029	402,330	174,504	296	227	4	-----	65	-----	14
15,603	1,617	258,247	-----	4,297	4,120	1,258,077	22,232	1,773,766	493,457	3,469	3,274	142	25	28	-----	15
21,604	16,416	143,603	-----	2,128	2,434	805,217	9,328	1,120,149	305,604	287	285	4	-----	98	-----	16
2,650	150	27,788	150	1,234	379	130,334	3,527	185,063	51,202	382	295	58	-----	29	-----	17
282,256	64,558	989,417	9,306	47,449	66,984	4,252,369	77,769	6,898,667	2,568,529	8,462	6,650	789	5	1,018	160	18
13,274	1,894	38,569	1,356	1,185	846	145,129	2,716	237,037	89,192	315	284	8	-----	23	-----	19

CANNING AND PRESERVING, FISH.

\$773,498	\$496,494	\$3,678,999	\$322,347	\$135,401	\$240,563	\$19,160,934	\$306,219	\$31,111,409	\$11,644,256	10,966	7,274	1,602	113	1,977	594	1
87,735	47,772	324,607	9,362	14,285	27,066	1,338,282	16,195	2,745,779	1,391,302	845	251	80	-----	514	29	2
1,080	-----	1,080	-----	120	30	6,922	115	10,473	3,436	-----	-----	-----	-----	-----	-----	3
1,800	555	19,470	60	832	25,106	651	57,015	81,258	130	125	-----	-----	-----	5	-----	4
-----	-----	4,864	420	52	23,370	700	38,477	14,407	-----	-----	-----	-----	-----	-----	-----	5
11,057	6,358	83,524	-----	630	1,939	302,498	4,529	657,497	350,470	155	150	5	-----	-----	-----	6
166,818	67,723	953,715	837	43,491	24,920	5,234,258	85,251	7,656,425	2,336,916	3,456	2,687	546	110	113	442	7
-----	668	23,421	64	1,020	777	46,023	1,182	97,857	50,632	229	139	89	-----	1	-----	8
129,460	149,131	658,636	468	21,438	29,565	4,031,363	20,462	5,797,774	1,745,949	431	150	14	-----	267	-----	9
21,070	8,880	173,553	-----	150	4,276	679,087	19,464	1,314,954	616,403	269	269	-----	-----	-----	-----	10
-----	650	14,365	-----	780	221	161,392	508	195,685	33,785	2	-----	-----	-----	2	-----	11
39,797	19,528	79,554	-----	10,765	2,310	1,141,526	8,901	1,411,354	280,927	126	50	19	-----	57	-----	12
72,115	71,607	171,679	118,963	17,741	29,659	1,847,606	27,889	2,929,657	1,054,162	1,016	796	55	3	162	4	13
10,340	3,193	47,929	-----	375	1,008	161,420	5,426	251,009	84,163	330	322	3	-----	5	-----	14
225,339	116,009	1,072,805	192,453	23,461	115,911	3,996,365	112,767	7,634,076	3,524,944	3,665	2,256	607	-----	802	89	15
5,967	665	22,032	-----	60	1,802	42,178	839	108,411	65,394	127	42	72	-----	13	-----	16
2,000	4,755	27,765	200	605	695	123,538	1,340	204,966	80,088	185	37	112	-----	36	-----	17

CANNING AND PRESERVING, OYSTERS.

\$61,251	\$67,115	\$423,697	\$8,669	\$5,220	\$13,506	\$1,193,417	\$31,789	\$2,238,053	\$1,012,847	1,895	1,346	531	-----	18	35	1
4,600	2,387	35,504	-----	-----	1,866	112,949	2,145	172,594	57,500	113	-----	103	-----	10	-----	2
9,400	38,828	34,058	4,293	4,025	836	192,547	2,743	321,817	126,527	101	60	40	-----	1	-----	3
6,668	3,665	28,483	-----	280	352	43,787	1,360	103,848	58,701	163	20	143	-----	-----	4	4
2,073	-----	32,765	1,365	820	381	113,368	2,755	175,118	58,995	141	123	18	-----	-----	-----	5
1,272	720	12,579	-----	-----	115	34,565	630	45,800	10,605	43	43	-----	-----	-----	5	6
1,680	-----	8,069	-----	-----	201	26,461	539	42,076	15,076	20	20	-----	-----	-----	-----	7
9,220	945	72,171	1,010	495	2,803	183,725	7,653	330,693	139,515	247	297	50	-----	-----	-----	8
13,345	10,413	42,176	1,501	-----	2,461	98,479	1,932	243,212	142,901	336	303	27	-----	6	25	9
12,993	10,157	167,842	500	100	4,491	387,536	12,032	802,695	403,127	631	490	150	-----	1	-----	10

¹ Includes: Connecticut, 6 establishments; Kansas, 2; Louisiana, 2; New Mexico, 1; North Dakota, 1; South Dakota, 2.

² Same number reported throughout the year.

³ Includes: District of Columbia, 1 establishment; Georgia, 2; Michigan, 3; North Carolina, 1; Ohio, 1; Pennsylvania, 2; South Carolina, 1.

⁴ Includes: Louisiana, 4 establishments; Mississippi, 2; North Carolina, 3; Virginia, 2.

MANUFACTURES.

TABLE 25.—DETAILED STATISTICS FOR CANNING

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.		Female.
								Maximum month.	Minimum month.						

PICKLES, PRESERVES, AND SAUCES.

1	United States.....	672	17,138	566	674	2,693	615	12,590	Se	19,136	Ap	10,026	15,953	8,090	7,595	74	194	\$43,196,381
2	Arizona.....	4	17	6	.....	2	.....	9	De	21	Au	2	21	19	2	.....	.....	22,156
3	California.....	58	1,134	61	53	101	23	896	De	1,336	Ap	463	1,455	588	851	2	14	3,327,967
4	Colorado.....	11	148	10	11	14	7	106	Se	142	Ja	79	125	74	51	.....	.....	372,694
5	Connecticut.....	9	103	5	4	11	8	75	Au	128	Ja	55	73	48	24	1	.....	243,087
6	Florida.....	10	19	11	.....	.....	.....	8	Se	23	Je	0	24	17	7	.....	.....	62,529
7	Illinois.....	63	1,486	46	70	133	45	1,192	Oc	1,844	Ap	959	1,724	882	792	10	40	3,654,134
8	Indiana.....	22	1,483	10	31	173	45	1,224	Se	3,507	Ja	511	2,938	1,674	1,264	.....	.....	2,977,575
9	Iowa.....	17	372	12	18	29	8	305	Se	524	Jy	222	244	155	85	1	3	1,222,404
10	Kansas.....	5	100	2	8	14	5	71	Oc	91	Ja	58	59	38	21	.....	.....	330,904
11	Kentucky.....	9	490	2	25	96	17	350	Oc	523	Ja	241	379	187	192	.....	.....	1,376,999
12	Louisiana.....	12	169	20	12	21	2	114	Se	171	De	68	137	67	66	4	.....	325,197
13	Maine.....	7	17	4	1	1	.....	11	Se	15	De	8	12	8	4	.....	.....	86,710
14	Maryland.....	20	146	21	5	25	1	94	Je	481	Fe	48	596	216	356	22	2	188,645
15	Massachusetts.....	30	483	20	29	65	16	353	Jy	399	My	335	353	204	148	1	.....	1,005,432
16	Minnesota.....	13	150	12	7	18	3	119	Se	181	Ap	85	103	69	34	.....	.....	528,561
17	Missouri.....	11	127	10	9	28	10	70	Je	75	De	63	75	42	29	1	8	138,811
18	Montana.....	3	8	3	.....	.....	.....	5	No	8	Ap	2	4	4	.....	.....	.....	14,650
19	New Jersey.....	41	542	37	21	26	11	447	Se	1,172	Ja	242	438	256	164	9	9	1,711,116
20	New York.....	107	2,646	102	87	219	59	2,179	Oc	2,968	My	1,624	2,275	1,111	1,162	2	.....	5,559,668
21	Ohio.....	39	1,025	23	47	76	26	853	Se	1,354	Ap	662	777	363	413	1	.....	2,626,220
22	Pennsylvania.....	49	4,420	51	96	1,431	274	2,568	Se	3,107	Ja	2,119	2,296	1,185	1,035	9	67	11,332,154
23	Rhode Island.....	8	26	6	2	3	1	14	De	19	Ap	7	24	17	7	.....	.....	31,516
24	Texas.....	10	169	5	15	30	5	114	Au	167	De	86	151	90	56	2	3	416,740
25	Utah.....	6	65	4	4	14	.....	43	Se	59	De	33	40	18	22	.....	.....	231,370
26	Virginia.....	10	97	6	14	3	4	70	Au	94	My	46	114	42	64	8	.....	125,356
27	Washington.....	12	130	4	16	14	2	94	Jy	143	De	79	132	54	53	.....	25	436,031
28	West Virginia.....	3	52	.....	5	8	1	38	Oc	69	Fe	25	63	31	32	.....	.....	160,897
29	Wisconsin.....	21	182	26	14	6	3	133	Au	202	Ja	100	190	83	105	.....	2	358,009
30	All other states ¹	62	1,323	47	70	132	39	1,035	.....	.....	.....	.....	1,131	548	556	1	26	4,328,859

¹ Owned power only.² Includes rented power, other than electric.³ Same number reported for one or more other months.⁴ None reported for one or more other months.

CANNING AND PRESERVING.

391

AND PRESERVING, BY STATES: 1914—Continued.

EXPENSES.							Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.			Primary horsepower.					
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.			Fuel and rent of power.	Total.	Steam engines. ¹	Internal-combustion engines. ²	Water wheels and motors. ¹	Electric (rented).	Electric horse-power generated in establishments reporting.

PICKLES, PRESERVES, AND SAUCES.

\$1,476,221	\$3,489,888	\$5,788,825	\$86,889	\$388,825	\$237,373	\$35,224,098	\$447,808	\$60,914,532	\$25,242,026	18,840	12,638	1,117	165	4,920	4,666	1
108,747	154,554	5,543	500	13,621	19,578	2,294,836	26,367	3,819,409	1,498,266	1,233	672	97	70	454	100	2
10,700	19,826	59,234	27,860	3,878	2,922	230,267	2,769	386,003	152,967	133	112		5	16		4
8,840	16,271	33,559		9,140	574	135,277	3,116	249,781	111,388	190	184	2		4	2	5
149,905	189,808	3,151	400	62,325	124	13,590	650	30,764	16,524	4		3		1		6
65,378	273,592	538,224	40,050	26,416	3,569,563	40,040	5,525,057	1,915,454	3,017	972	78			1,967	456	7
29,073	46,639	581,303	294	5,450	15,049	2,905,600	43,549	5,490,134	2,540,925	1,545	1,260	15		270	496	8
11,800	18,456	139,543		197	7,245	869,066	12,984	1,842,713	960,663	524	381	94		49	183	9
		33,095		420	2,253	202,792	5,271	393,127	95,064	188	177			11		10
53,048	121,478	147,821	1,800	10,644	7,202	1,205,499	12,254	2,027,152	809,399	429	412	3		14	70	11
22,205	21,155	38,542	2,699	3,721	1,776	122,754	2,872	298,874	173,248	116	80	13		23		12
822	1,035	6,112		1,400	477	60,092	1,638	85,943	24,213	138	100	2		36		13
8,876	15,559	44,669	289	6,032	1,562	268,644	3,185	385,392	113,563	170	128	10		32	25	14
61,601	113,727	204,996	2,682	46,316	10,745	1,520,549	20,155	2,350,610	809,906	515	226	109		180	112	15
22,500	23,538	64,130		2,036	2,742	479,369	4,402	756,941	273,170	108	35	12		61		16
17,640	21,073	35,932		4,908	745	335,570	1,645	471,865	134,650	47	20	2		25		17
		2,600	35	258	47	13,309	356	19,670	6,005	10		10				18
37,324	39,096	209,112	1,018	10,775	6,395	1,291,769	27,676	2,202,364	882,919	837	663	21		153	563	19
240,096	353,236	1,066,769	3,958	133,342	31,356	6,061,519	74,078	9,675,193	3,539,596	1,929	907	295		727	298	20
93,120	120,120	369,484	1,677	9,066	14,783	2,741,135	31,271	4,221,691	1,449,285	2,100	1,937	66		97	395	21
306,298	1,683,530	1,130,526	386	33,673	45,546	6,704,000	75,131	13,829,588	7,049,857	3,242	2,832	92	54	264	1,880	22
1,010	901	5,746		1,563	167	54,249	966	77,365	22,120	19				19		23
21,738	46,338	41,534	688	648	2,617	395,200	3,411	693,068	294,457	138	85			53		24
6,920	15,120	17,048		160	1,621	158,276	2,631	228,090	67,183	125	115			10	2	25
17,425	2,717	23,450	500	5,188	1,289	124,586	1,555	209,633	83,492	62	51			11		26
21,860	16,896	63,641		7,390	3,058	251,338	3,385	452,112	197,389	177	96	3	20	58		27
5,530	5,385	16,235		1,000	984	127,908	1,962	166,430	36,560	170	170				10	28
19,171	5,205	52,258	1,123	2,445	1,703	194,589	2,543	328,290	131,128	141	60		1	17	10	29
126,094	163,913	442,787	930	13,129	28,097	2,797,016	41,619	4,675,782	1,837,147	1,440	963	96	15	366	64	30

¹ Includes: Alabama, 2 establishments; Delaware, 3; District of Columbia, 1; Georgia, 2; Michigan, 39; Mississippi, 1; Nebraska, 3; North Carolina, 2; North Dakota, 1; Oregon, 4; South Carolina, 1; Tennessee, 1; Vermont, 2.

FLOUR-MILL AND GRISTMILL PRODUCTS.

By CHARLES H. LeROY.

GENERAL STATISTICS.

Summary for the industry.—At the censuses of 1914 and 1904 the canvass for the flour-mill and gristmill industry was limited to merchant mills—that is, mills in which cereals were purchased and ground and the finished products sold. At all other censuses statistics were also collected for the small custom mills which grind for toll and produce flour, meal, etc., for local consumption. The reports for the two classes of mills were tabulated separately at the census of 1909, and, when the statistics for the census of 1904 were compiled the figures for 1899 were revised so as to exclude the data for the custom mills in order to make the figures for the two censuses comparable.

A number of mills do both merchant and custom grinding; and it is possible that some custom mills were included at 1904 and 1914. It is also probable that the separation of the two classes at the censuses of 1909 and 1899 was not on strictly uniform lines. This condition has possibly resulted in the inclusion of a larger proportion of small mills at one census than at another and should be considered in accepting the statistics given in Table 1 and in other comparative tables. Table 1 summarizes the statistics of establishments engaged in the industry for the censuses of 1899, 1904, 1909, and 1914, and gives the percentages of increase from census to census.

Table 1.	NUMBER OR AMOUNT.				PER CENT OF INCREASE. ¹		
	1914	1909	1904	1899	1909-1914	1904-1909	1899-1904
Number of establishments.....	10,788	11,691	10,051	9,476	-7.7	16.3	6.1
Persons engaged in the industry.....	65,635	66,054	59,623	(²)	-0.6	10.8	.....
Proprietors and firm members.....	12,669	14,570	13,098	(²)	-13.0	11.2	.....
Salaried employees.....	13,248	12,031	7,415	5,522	10.1	62.3	24.3
Wage earners (average number).....	39,718	39,453	29,110	22,226	0.7	0.9	21.4
Primary horsepower.....	822,384	853,584	775,318	670,719	-2.7	10.1	15.6
Capital.....	\$390,257,420	\$349,151,779	\$265,117,434	\$189,281,330	8.9	31.7	40.1
Salaries and wages.....	\$40,963,303	\$33,981,153	\$27,174,553	\$21,543,154	20.5	25.0	26.1
Salaries.....	\$16,370,141	\$12,516,767	\$7,352,357	\$5,257,991	30.8	70.2	39.9
Wages.....	\$24,593,162	\$21,464,386	\$19,822,196	\$16,285,163	14.6	8.3	21.7
Paid for contract work.....	\$115,447	\$669,271	\$95,218	(²)	-82.8	602.9	.....
Rent and taxes (including internal revenue).....	\$3,798,482	\$2,754,128	\$2,196,945	(²)	37.9	25.4	.....
Cost of materials.....	\$752,270,021	\$767,576,479	\$619,971,161	\$428,116,757	-2.0	23.8	44.8
Value of products.....	\$377,679,700	\$383,584,405	\$713,033,395	\$501,396,304	-0.7	23.9	42.2
Value added by manufacture (value of products less cost of materials).....	\$125,409,688	\$116,007,926	\$93,062,234	\$73,279,547	8.1	24.7	27.0
Grain ground, bushels.....	818,929,321	806,247,961	754,945,729	729,061,820	1.6	6.8	3.6

¹ A minus sign (—) denotes decrease. ² Figures not available. ³ Exclusive of internal revenue. ⁴ Includes wheat, corn, rye, buckwheat, barley, and oats.

The decrease in the number of establishments is due largely to the depression which occurred in the industry during 1914. It may also be explained by the fact that a number of grain elevators discontinued the milling branch of the business and that a number of small mills ceased operations during the interim between censuses, and it may be also that some mills which did both merchant and custom grinding in 1909 did no merchant work in 1914 and were therefore omitted from the canvass. The reduction in number of proprietors and firm members is explained in the analysis of Table 4. While the decrease of 82.8 per cent, from 1909 to 1914, in the amount reported for contract work is in sharp contrast to the gain of 602.9 per cent shown for this item, for the preceding five-year period, the fact in itself is no indication of a depression in the industry, since the expenditure for such work depends upon the methods followed in business and not on the magnitude of the operations.

The prices of cereal products have changed to such an extent during recent years that the value of products should not be used to determine the increase or decrease in the industry. During 1914 the prices for some of the products were considerably lower than in 1909, and a decrease of \$5,904,696, or seven-tenths of 1 per cent, is shown for the total value. During the same period the quantity of wheat, corn, oats, and other grains ground increased by 12,681,360 bushels, or 1.6 per cent. Not only has there been a constant increase from census to census in the total quantity of these cereals ground, but there has been a slight increase in the average quantity ground per establishment—75,911 bushels in 1914 as compared with 75,112 bushels in 1904. The cost of grain is the principal expense in the operation of the mills. The cost of all materials reported for 1914 amounted to \$752,270,021, and formed 85.7 per cent of the total value of products. The decrease in prices in 1914 as compared with 1909

is reflected in the decrease in cost of materials, resulting in an increase in value added by manufacture.

Comparative summary, by states.—Table 2 summarizes the more important statistics for the industry,

by states, the states being arranged according to the value of products reported for 1914, while the diagram on page 5 shows the value of products for the leading states for 1914 and 1904.

Table 2

Table 2		CENSUS OF 1914.												PER CENT OF INCREASE. ¹								
STATE.	Number of establishments.	Wage earners.		Rank.		Value of products.		Rank.		Value added by manufacture.		Rank.		Wage earners (average number)			Value of products.			Value added by manufacture.		
		Average number.	Per cent distribution.	1914	1909	Amount.	Per cent distribution.	1914	1909	Amount.	Per cent distribution.	1914	1909	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904
United States..	10,785	39,718	100.0	.....	.....	\$877,679,709	100.0	.....	.....	\$125,409,688	100.0	.....	.....	0.7	0.9	21.4	-0.7	23.9	42.2	8.1	24.7	27.0
Minnesota.....	286	4,564	11.5	1	1	148,243,708	16.9	1	1	20,929,137	16.7	1	1	5.0	-3.0	11.0	6.5	14.0	47.1	40.3	14.8	41.8
New York.....	891	3,070	7.7	2	2	77,408,764	8.8	2	2	9,986,003	8.0	2	2	2.7	-2.4	43.6	10.9	28.0	51.7	7.0	30.1	47.2
Kansas.....	380	2,357	5.9	6	6	72,894,736	8.3	3	3	8,652,564	6.9	3	3	-0.1	28.9	30.3	6.4	62.9	97.1	7.7	56.4	60.7
Illinois.....	406	2,398	6.0	4	4	49,493,224	5.6	4	4	6,652,317	5.3	4	8	-2.7	2.2	22.6	-3.2	28.1	39.6	20.5	11.3	36.4
Ohio.....	649	2,363	5.9	5	3	45,171,200	5.1	5	5	6,213,814	5.0	6	4	-8.6	-4.3	15.7	-6.1	17.7	16.5	-7.8	28.9	2.7
Pennsylvania.....	1,265	2,595	6.5	3	5	43,626,356	5.0	6	6	6,529,474	5.2	5	5	6.7	-7.6	33.9	-2.6	16.3	30.3	-1.3	24.4	12.9
Missouri.....	641	2,096	5.3	8	8	38,686,909	4.4	7	7	5,423,920	4.3	8	6	-4.6	-6.3	54.6	-13.1	17.0	59.6	-4.6	11.5	34.2
Indiana.....	512	2,281	5.7	7	7	37,488,223	4.3	8	8	5,247,557	4.2	9	7	-0.7	0.4	10.5	-7.5	11.2	25.6	-5.3	7.9	21.2
Texas.....	191	1,300	3.3	12	12	35,110,301	4.0	9	10	5,537,114	4.4	7	11	6.9	23.3	44.6	8.1	47.1	84.8	44.6	22.7	68.2
Wisconsin.....	252	1,116	2.8	13	13	28,697,413	3.3	10	11	3,717,512	3.0	14	10	-5.7	-12.4	6.0	-9.4	11.7	19.6	-19.7	28.7	16.8
Michigan.....	427	1,370	3.4	11	10	27,381,474	3.1	11	9	4,082,303	3.3	12	9	-10.5	1.5	13.5	-21.5	31.5	22.5	-25.8	77.6	-4.3
Tennessee.....	512	1,497	3.8	9	9	26,413,574	3.0	12	12	4,341,853	3.5	11	12	-5.1	-1.1	51.2	-9.1	14.7	32.3	14.7	10.0	21.2
California.....	132	1,067	2.7	15	15	24,078,735	2.7	13	13	4,574,961	3.6	10	14	12.6	6.6	3.7	-4.4	24.7	54.9	38.8	7.3	51.9
Washington.....	109	928	2.3	16	19	23,665,882	2.7	14	16	3,392,887	2.7	15	18	44.1	5.1	27.2	32.6	21.7	116.5	42.6	25.7	68.3
Kentucky.....	442	1,447	3.6	10	11	21,229,203	2.4	15	14	3,809,749	3.0	13	13	3.3	2.0	30.8	-5.1	24.2	38.3	2.9	27.2	31.0
Virginia.....	533	1,082	2.7	14	14	18,084,413	2.1	16	18	2,694,903	2.1	16	17	6.7	6.0	56.1	2.8	27.2	54.7	10.7	46.5	13.9
Oklahoma.....	253	700	1.8	18	16	16,688,690	1.9	17	15	2,321,724	1.9	18	15	-16.9	36.5	78.8	-12.8	59.3	155.0	-12.4	44.7	121.3
Nebraska.....	211	682	1.7	19	17	15,022,126	1.7	18	17	2,038,893	1.6	19	16	-18.7	-2.8	26.5	-15.8	46.3	56.4	-22.1	28.6	24.2
Iowa.....	227	790	2.0	17	18	14,336,576	1.6	19	19	2,678,840	2.1	17	19	22.1	-16.0	-18.3	11.4	6.4	9.9	33.1	8.7	-12.8
North Dakota.....	59	424	1.1	23	24	12,029,905	1.4	20	20	1,957,661	1.6	20	20	-2.5	39.4	15.1	3.0	80.8	67.9	20.1	63.0	33.7
Oregon.....	95	450	1.1	22	25	11,192,573	1.3	21	22	1,365,342	1.1	21	23	14.2	-0.3	-6.0	25.9	5.0	38.0	11.5	9.7	16.7
North Carolina.....	263	588	1.5	20	21	8,963,501	1.0	22	23	1,319,718	1.1	22	24	18.5	-4.4	7.9	5.4	23.8	46.0	8.7	38.3	2.6
Maryland.....	247	473	1.2	21	20	8,163,869	0.9	23	21	1,245,309	1.0	23	22	-6.5	-8.0	10.0	-11.9	26.6	1.1	-1.6	14.2	-2.4
Colorado.....	83	393	1.0	24	29	7,535,633	0.9	24	25	1,099,855	0.9	25	25	39.4	15.6	-10.3	-4.2	36.1	30.2	-8.0	21.3	46.7
West Virginia.....	229	381	1.0	25	23	7,052,814	0.8	25	26	1,124,386	0.9	24	26	-15.7	13.0	57.5	-8.4	24.1	63.5	2.7	10.9	44.3
Georgia.....	128	367	0.9	26	26	6,083,760	0.7	26	24	829,580	0.7	28	21	-4.9	-16.8	3.8	-24.0	-2.2	53.6	-34.8	39.2	4.0
Arkansas.....	102	282	0.7	28	27	5,802,099	0.7	27	28	630,105	0.5	31	29	-9.6	18.6	-5.1	3.3	51.7	34.2	-16.7	38.7	7.1
South Dakota.....	72	255	0.6	30	28	5,556,996	0.6	28	27	835,305	0.7	27	28	-10.5	-17.9	26.2	-10.5	-4.8	103.1	-4.3	-24.9	121.6
Montana.....	33	256	0.6	29	39	4,890,275	0.6	29	37	988,343	0.8	26	33	143.8	.....	.....	124.8	8.6	113.8	105.1	17.3	152.1
Maine.....	148	217	0.5	31	31	4,425,824	0.5	30	31	466,044	0.4	34	34	-3.6	-3.8	28.6	-1.8	14.6	25.1	-2.8	-2.2	-5.6
New Jersey.....	196	341	0.9	27	22	4,320,424	0.5	31	29	730,413	0.6	29	27	-24.7	-0.2	21.4	-22.0	1.3	2.7	-25.2	3.2	7.6
Vermont.....	125	179	0.5	34	34	4,142,854	0.5	32	32	483,804	0.4	33	31	-14.7	-15.7	8.8	0.2	28.9	15.7	-20.0	81.7	-31.1
Massachusetts.....	105	176	0.4	35	30	3,811,377	0.4	33	30	387,490	0.3	35	32	-23.1	-17.3	-0.4	-17.7	0.3	-14.4	-22.7	-0.8	-43.6
Idaho.....	71	188	0.5	33	37	3,395,942	0.4	34	36	688,910	0.5	30	35	50.1	.....	.....	36.9	56.6	115.8	47.0	69.1	66.0
Utah.....	70	198	0.5	32	32	3,155,513	0.4	35	34	518,196	0.4	32	30	7.6	22.7	0.7	0.8	29.1	46.2	-16.5	61.9	4.1
New Hampshire.....	79	144	0.4	36	38	2,733,820	0.3	36	33	311,818	0.2	36	36	24.1	-9.4	-18.5	-14.2	25.4	15.3	-17.7	94.8	-28.9
Alabama.....	73	125	0.3	38	33	2,179,165	0.2	37	35	261,014	0.2	38	37	-25.6	5.7	15.2	-21.6	58.8	11.3	-30.2	92.8	-5.8
Connecticut.....	85	113	0.3	39	35	1,881,481	0.2	38	38	280,665	0.2	39	38	-22.1	-13.2	-1.8	-7.0	2.1	16.6	-14.4	0.7	-3.3
Delaware.....	60	127	0.3	37	36	1,483,410	0.2	39	39	280,810	0.2	37	39	-8.6	1.5	14.2	-15.3	14.0	43.6	11.5	13.5	32.1
Arizona.....	8	38	0.1	42	41	1,064,996	0.1	40	40	215,005	0.2	40	40	-29.6	.....	.....	-19.1	77.3	65.8	14.3	84.3	.....
Rhode Island.....	20	74	0.2	40	42	797,553	0.1	41	42	107,479	0.1	43	45	89.7	.....	.....	-10.0	-21.9	-37.7	11.7	.....	-71.2
Wyoming.....	18	33	0.1	43	44	721,818	0.1	42	43	167,097	0.1	41	41	13.8	.....	.....	-3.3	162.7	84.6	2.3	.....	.....
Louisiana.....	7	31	0.1	44	40	687,387	0.1	43	41	63,222	0.1	47	43	-62.2	.....	.....	-27.1	.....	-77.2	-38.5	.....	.....
New Mexico.....	17	29	0.1	46	45	424,501	(*)	44	46	37,415	0.1	44	42	3.6	.....	.....	-8.0	19.1	-0.8	-18.9	.....	.....
South Carolina.....	37	30	0.1	45	47	420,629	(*)	45	47	74,443	0.1	45	47	30.4	.....	.....	20.0	-51.6	-16.6	75.8	.....	-31.9
Mississippi.....	17	48	0.1	41	48	410,332	(*)	46	49	66,054	0.1	46	49	166.7	.....	.....	168.2	39.1	-73.3	207.6	.....	.....
Nevada.....	7	28	0.1	47	46	386,566	(*)	47	44	109,429	0.1	42	44	16.7	.....	.....	-35.3	14.8	264.3	7.1	.....	.....
Florida.....	13	22	0.1	48	49	166,237	(*)	48	48	32,206	(*)	48	48	100.0	.....	.....	1.4	19.7	7.0	31.0	.....	.....
District of Columbia	3	5	(*)	49	43	78,048	(*)	49	45	6,445	(*)	49	46	-86.8	.....	.....	-84.6	-23.3	4.9	-91.3	.....	.....

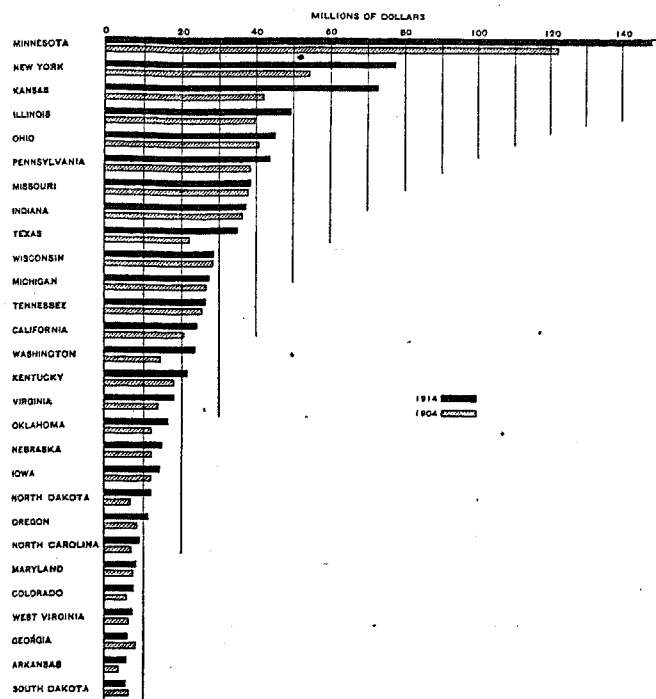
¹ Percentages are based on figures in Table 20; a minus sign (-) denotes decrease. Percentages are omitted where base is less than 100 for wage earners or less than \$100,000 for value of products, or value added by manufacture, or where comparable figures can not be given.

² Less than one-tenth of 1 per cent.

Flour mills or gristmills were reported for every state and for the District of Columbia at the census of 1914. In a number of states the gristmill operated by water power and equipped with the buhrstone is being displaced to a considerable extent by the attrition or steel mill. In 1904 there were reported 10,609 runs of stone, but in 1914 the number had been reduced by 2,905. The equipment of the mills reported for 1914 consisted of 42,841 stands of rolls, 7,704 runs of stone, and 6,793 attrition mills or steel grinders, including steel buhr mills.

Minnesota ranked first in the industry at the censuses of 1914, 1909, and 1904. The mills of the state gave

employment to 11.5 per cent of the total number of wage earners engaged in the industry and their products formed 16.9 per cent of the total products reported for 1914. New York ranked second in the value of products and value added by manufacture and Kansas third. In the number of wage earners reported for the industry Pennsylvania ranked third, Illinois fourth, Ohio fifth, and Kansas sixth. While the majority of the important states in the industry held relatively the same rank in value of products in 1914 as in 1909, Texas advanced from tenth to ninth place, Wisconsin from eleventh to tenth, and Michigan dropped from ninth to eleventh place.

MERCHANT FLOUR MILLS AND GRISTMILLS—VALUE OF PRODUCTS,
FOR LEADING STATES: 1914 AND 1904.

Persons engaged in the industry.—Table 3 shows for 1914 and 1909, the number of persons engaged in the industry, distributed by sex, the average number of wage earners being distributed also by age. The sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

The average number of persons engaged in the industry during 1914 was 65,635, of whom 60.5 per cent were wage earners, 25.9 per cent proprietors and officials, and 13.6 per cent clerks. Of the total number of persons reported 95.7 per cent were males and 4.3 per cent females. More than two-thirds of the

2,841 females were clerks, there being only 507 wage earners and no children under 16 years of age reported for the sex.

The average number of wage earners for each state, as reported at the censuses of 1914, 1909, and 1904, is given in Table 20. The distribution of the average number by sex and age is not shown for the individual states, but Table 21 gives such a distribution for the number employed on December 15, or the nearest representative day in 1914. The largest number of female wage earners (93) was reported for the state of Minnesota, and the next largest number (82) for Iowa. Employees under 16 years of age were reported from 23 states, the largest number (17) being shown for Pennsylvania.

Table 3

CLASS.	Cen- sus year.	PERSONS ENGAGED IN THE INDUSTRY.				
		Total.	Male.	Fe- male.	Per cent of total.	
					Male.	Fe- male.
All classes.....	1914	65,635	62,794	2,841	95.7	4.3
	1909	66,054	63,492	2,562	96.1	3.9
Proprietors and officials.....	1914	17,013	16,575	438	97.4	2.6
	1909	18,763	18,286	477	97.5	2.5
Proprietors and firm members....	1914	12,669	12,264	405	96.8	3.2
	1909	14,570	14,111	459	96.8	3.2
Salaried officers of corporations...	1914	1,743	1,719	24	98.6	1.4
	1909	1,486	1,473	13	99.1	0.9
Superintendents and managers...	1914	2,601	2,562	39	99.7	0.3
	1909	2,707	2,702	5	99.8	0.2
Clerks and other subordinate sala- ried employees.	1914	8,904	7,008	1,896	78.7	21.3
	1909	7,838	6,284	1,554	80.2	19.8
Wage earners (average number)....	1914	39,718	39,211	507	98.7	1.3
	1909	39,453	38,922	531	98.7	1.3
16 years of age and over.....	1914	39,642	39,135	507	98.7	1.3
	1909	39,320	38,798	524	98.7	1.3
Under 16 years of age.....	1914	76	76	0	100.0	0.0
	1909	133	126	7	94.7	5.3

Table 4 gives, for the several classes of persons engaged in the industry, the percentages of increase from 1909 to 1914, and the per cent distribution at the two censuses.

Table 4

CLASS.	PERSONS ENGAGED IN THE INDUSTRY.							
	Per cent of increase, ¹ 1909-1914.			Per cent distribution.				
	Total.	Male.	Female.	Total.		Male.		Female.
				1914	1909	1914	1909	1914
All classes.....	-0.6	-1.1	10.9	100.0	100.0	100.0	100.0	100.0
Proprietors and officials.....	-9.3	-9.4	-8.2	25.9	28.4	26.4	28.8	15.4
Proprietors and firm members....	-13.0	-13.1	-11.8	19.3	22.1	19.5	22.2	14.3
Salaried officers of corporations...	17.3	16.7	17.3	2.7	2.2	2.8	2.3	0.8
Superintendents and managers...	-3.9	-4.1	4.0	4.0	4.1	4.1	4.3	0.3
Clerks and other subordinate salaried employees.....	13.6	11.5	22.0	13.6	11.9	11.2	9.9	66.7
Wage earners (average number).....	0.7	0.7	-4.5	60.5	59.7	62.4	61.8	17.9
16 years of age and over.....	0.8	0.9	-3.2	99.8	99.7	99.8	99.7	100.0
Under 16 years of age.....	-42.9	-39.7	0.2	0.2	0.3	0.2	0.3	95.7

¹ A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.

The decrease of 419 or six-tenths of 1 per cent, shown for the number of persons engaged in the industry during 1914 as compared with 1909, is due to the decrease of 1,901 in the number of proprietors and firm

members, and of 106 in the number of superintendents and managers. The decrease in proprietors and firm members follows the decrease in the number of establishments operated by individuals and forms of owner-

ship other than corporations, for which statistics are given in Table 8. There was a decrease of only 7 in the number of establishments operated by corporations, and it is probable that some of the establishments operated by individuals or firms at the census of 1909 were organized as corporations during the interim between the censuses, and the owners reported as salaried officials at the census of 1914. During the five years from 1909 to 1914, the per cent that proprietors and officials formed of the total number engaged in the industry decreased from 28.4 to 25.9 per cent, while the percentage of clerks increased from 11.9 to 13.6, and that of wage earners from 59.7 to 60.5.

Wage earners employed, by months.—The following table gives for the industry the total number of wage earners employed on the 15th of each month, or the nearest representative day for 1914 and 1909, and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

The largest number of wage earners (41,684) were employed during September, 1914, and the smallest number (37,921) in May, the minimum number forming 91 per cent of the maximum. The industry is not affected to an appreciable extent by the seasonal demand for its products, and many of the large establish-

ments operated almost continuously at normal capacity throughout the year. A comparison of the statistics for 1914 with those for 1909 shows very little change in the number employed each month. In 1909, however, the maximum number (41,898) was reported for November, and the minimum number (36,911) for June.

Table 5

WAGE EARNERS IN THE INDUSTRY.

MONTH.	Number. ¹			Per cent of maximum.		
	1914	1909	1904	1914	1909	1904
January.....	39,284	39,120	38,967	94.2	93.4	93.9
February.....	39,140	39,281	38,816	93.9	93.8	93.5
March.....	39,058	39,154	38,975	93.7	93.5	93.9
April.....	38,324	37,776	37,690	91.9	90.2	90.8
May.....	37,921	37,466	36,817	91.0	89.4	88.7
June.....	38,114	36,911	36,804	91.4	88.1	88.7
July.....	39,560	38,021	38,120	94.9	90.7	91.8
August.....	40,526	39,629	39,284	97.2	91.6	94.6
September.....	41,684	40,887	40,753	100.0	97.6	98.2
October.....	41,234	41,702	41,508	98.9	99.5	100.0
November.....	41,028	41,898	41,110	98.4	100.0	99.0
December.....	40,743	41,600	40,476	97.7	99.3	97.5

¹ The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

Table 6 gives the total average number of wage earners employed in the industry during 1914, together with the total number employed on the 15th of each month, or the nearest representative day for the 25 states in which an average of about 400 or more wage earners were employed during the year.

Table 6

WAGE EARNERS: 1914.

[Month of maximum employment for each industry is indicated by boldface figures and that of minimum by *italic* figures.]

STATE.	Average number employed during year.	Number employed on 15th day of the month or nearest representative day.												Per cent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
United States.....	39,718	39,284	39,140	39,058	38,324	37,921	38,114	39,560	40,526	41,684	41,234	41,028	40,743	91.0
California.....	1,067	1,020	1,005	983	<i>957</i>	958	970	1,062	1,091	1,249	1,238	1,207	1,064	76.6
Colorado.....	393	386	378	386	362	364	361	364	416	429	428	418	424	84.1
Illinois.....	2,398	2,297	2,350	2,357	2,403	2,352	2,324	2,427	2,490	2,482	2,443	2,426	2,431	92.2
Indiana.....	2,281	2,271	2,239	2,314	2,230	<i>2,160</i>	2,226	2,362	2,333	2,313	2,341	2,349	2,349	91.4
Iowa.....	790	773	765	761	740	<i>732</i>	745	772	800	845	858	860	829	85.1
Kansas.....	2,357	2,148	2,194	2,265	2,213	2,162	2,192	2,332	2,564	2,684	2,607	2,457	2,466	80.0
Kentucky.....	1,447	1,383	1,399	1,395	1,363	1,399	1,385	1,567	1,559	1,550	1,465	1,452	1,442	87.3
Maryland.....	473	478	469	463	457	455	448	459	481	494	494	492	482	90.7
Michigan.....	1,370	1,396	1,404	1,392	1,333	1,316	<i>1,306</i>	1,329	1,346	1,398	1,410	1,404	1,406	92.6
Minnesota.....	4,564	4,647	4,673	4,588	4,492	4,483	4,485	<i>4,466</i>	4,482	4,661	4,530	4,616	4,645	95.6
Missouri.....	2,096	2,011	2,030	2,045	1,970	<i>1,966</i>	1,978	2,209	2,230	2,244	2,206	2,126	2,137	87.6
Nebraska.....	682	677	681	673	667	<i>651</i>	670	678	689	711	709	689	689	91.6
New York.....	3,070	3,108	3,059	3,063	3,016	2,956	2,963	3,054	3,128	3,193	3,163	3,206	3,192	91.6
North Carolina.....	588	586	587	589	586	<i>581</i>	585	591	599	592	591	589	590	98.1
North Dakota.....	424	402	403	399	411	<i>375</i>	381	414	417	472	486	466	462	77.2
Ohio.....	2,363	2,350	2,342	2,352	2,348	2,301	2,299	2,382	2,425	2,420	2,374	2,379	2,384	94.8
Oklahoma.....	700	681	661	<i>650</i>	666	<i>650</i>	657	726	753	761	729	728	738	85.4
Oregon.....	450	477	426	413	366	395	374	414	447	539	538	518	493	67.9
Pennsylvania.....	2,595	2,596	2,591	2,570	2,546	2,549	<i>2,530</i>	2,540	2,579	2,638	2,669	2,678	2,645	94.5
Tennessee.....	1,497	1,478	1,450	1,437	1,419	<i>1,367</i>	1,496	1,602	1,626	1,537	1,612	1,549	1,491	84.1
Texas.....	1,300	1,307	1,288	1,281	<i>1,246</i>	1,271	1,285	1,314	1,379	1,355	1,308	1,295	1,291	90.4
Virginia.....	1,082	1,068	1,065	1,056	1,047	<i>1,036</i>	1,055	1,091	1,118	1,116	1,117	1,103	1,112	92.7
Washington.....	928	997	991	926	855	829	804	791	870	1,076	1,009	965	963	73.5
West Virginia.....	381	<i>355</i>	357	359	363	364	366	368	382	386	424	422	426	83.3
Wisconsin.....	1,116	1,099	1,085	1,106	1,057	1,048	1,047	<i>1,045</i>	1,084	1,209	1,199	1,197	1,216	85.9

The milling industry shows comparatively little fluctuation between the months of greatest and least activity. There were only two states—Oregon and Washington—in which the month of minimum employment represented less than 75 per cent of the maxi-

mum. In the leading states—Minnesota, New York, and Kansas—the height of employment was reached during the fall and winter months. Illinois and Ohio, the next ranking states in the industry, each reported August as the month of maximum employment.

Prevailing hours of labor.—In Table 7 the average number of wage earners reported for 1914 and 1909 for the industry has been classified according to the number of hours of labor per week prevailing in the estab-

lishments in which they were employed. The number employed in each establishment was classified as a total, even though a few employees worked a greater or smaller number of hours.

Table 7	STATE.	Census year.	AVERAGE NUMBER OF WAGE EARNERS.								
			Total.	In establishments where the prevailing hours of labor per week were—							
				48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72.	Over 72.
United States.....	1914	1909	39,718 39,453	3,414 3,395	355 591	2,949 2,602	1,331 1,075	22,714 19,060	4,001 4,060	4,261 7,132	93 338
California.....	1914	1909	1,067 948	34 117	46 71	136 77	96 53	745 371	9 255	1 4	.....
Colorado.....	1914	1909	383 282	9 11	.....	5 10	4 16	64 172	229 71	82 2	.....
Illinois.....	1914	1909	2,398 2,464	97 310	4 50	111 24	82 19	1,294 1,229	406 331	404 471	..... 30
Indiana.....	1914	1909	2,281 2,298	80 114	15 13	52 43	36 18	1,440 1,149	263 343	291 571	4 47
Iowa.....	1914	1909	790 647	28 36	2 6	15 22	..... 1	655 403	37 99	55 30	..... 50
Kansas.....	1914	1909	2,357 2,360	61 131	1 32	34 17	2 6	1,377 1,131	493 282	477 659	2 122
Kentucky.....	1914	1909	1,447 1,401	321 245	15 189	48 8	16 30	746 470	213 142	80 317	8
Maryland.....	1914	1909	473 506	9 16	2 1	8 1	11 16	274 229	108 57	60 184	1 2
Michigan.....	1914	1909	1,370 1,530	80 115	14 33	87 11	19 10	903 1,219	124 85	114 57	29
Minnesota.....	1914	1909	4,564 4,345	1,458 353	..... 3	904 1,300	18 907	1,646 1,207	355 343	181 232	2
Missouri.....	1914	1909	2,096 2,198	116 119	5 6	104 32	11 6	1,049 949	557 368	251 709	3 9
Nebraska.....	1914	1909	682 839	14 11	7 14	18 6	4 6	410 447	194 236	35 116	..... 3
New York.....	1914	1909	3,070 2,990	76 79	47 12	252 539	115 57	2,577 1,839	1 119	2 335	..... 10
North Carolina.....	1914	1909	588 496	11 14	..... 4	5 7	15 18	399 307	114 117	44 29	..........
North Dakota.....	1914	1909	424 435	..... 3	..... 1	13	1 3	317 348	51 52	42 28	..........
Ohio.....	1914	1909	2,363 2,585	115 207	18 53	216 56	105 66	1,683 1,571	168 378	58 253	..... 1
Oklahoma.....	1914	1909	700 842	27 98	3 10	30 11	..... 4	252 280	165 168	223 271	..........
Oregon.....	1914	1909	450 394	50 7	3	14 11	..... .....	383 280	..... 15	..... 80	..... 1
Pennsylvania.....	1914	1909	2,595 2,432	80 273	69 49	327 147	262 211	1,334 1,088	321 377	177 263	25 24
Tennessee.....	1914	1909	1,497 1,577	47 167	4 5	24 3	102	484 410	230 78	606 913	..... 1
Texas.....	1914	1909	1,300 1,216	22 108	1	108 2	94	475 281	161 200	438 625	6
Virginia.....	1914	1909	1,082 1,014	53 83	3 12	5 13	63 13	730 510	34 71	188 300	6 7
Washington.....	1914	1909	928 644	156 45	59	8 45	43 17	655 333	7 27	..... 177	..........
West Virginia.....	1914	1909	381 452	16 74	..... 4	20 17	19 25	294 273	14 35	18 22	..... 2
Wisconsin.....	1914	1909	1,116 1,184	108 248	1 5	76 4	6 2	722 837	36 76	165 10	2 2

The totals for the United States show a slight decrease in the hours of employment. In 1914 the establishments reported as operating 60 hours or less per week gave employment to 30,763 wage earners, or 77.5 per cent of the total number reported for the industry. The same class of establishments in 1909 reported 27,323 wage earners, or 69.3 per cent of the total

number. There was a decrease of 3,116, or 41.7 per cent, in the number reported by establishments operating 72 hours or over per week. The only states reporting a material increase in the number of wage earners employed in establishments where the prevailing hours of labor were more than 60 per week were Colorado, Michigan, and Wisconsin.

The greatest number of wage earners reported for any one group was shown for establishments where the prevailing hours of work were 60 per week. This group, containing 57.2 per cent of the wage earners engaged in the industry in 1914, was the most important likewise in all but two of the individual states for which figures are given.

Character of ownership.—Table 8 presents statistics concerning the character of ownership, or legal organization of establishments in the flour-mill and grist-mill industry, for 1914 and 1909. The table gives also similar data for 25 separate states for 1914 only.

The figures in this table indicate a trend toward corporate ownership in the milling industry. Of the

entire number of establishments reported for the industry 21 per cent were under corporate control in 1914 as compared with 19.4 per cent in 1909. While this class of establishments constituted only about one-fifth of the total number at each census, the value of their product represented 73.5 per cent and the number of wage earners 63.5 per cent of the total for the industry in 1914. The corresponding proportions for 1909 were 66.6 per cent for value of products and 58 per cent for wage earners. Between 1909 and 1914 there was a pronounced decrease both in the relative number of establishments under individual and other ownership, and in the proportion which they reported of the total value of products.

Table 8

Table 8	STATE.	NUMBER OF ESTABLISHMENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.									VALUE OF PRODUCTS.								
					Total.	In establishments owned by—			Per cent of total.			Total.	Of establishments owned by—			Per cent of total.						
		Indi-vid-u-als.	Cor-pora-tions.	All oth-ers.		Indi-vid-u-als.	Cor-pora-tions.	All oth-ers.	Indi-vid-u-als.	Cor-pora-tions.	All oth-ers.		Indi-vid-u-als.	Cor-pora-tions.	All oth-ers.	Indi-vid-u-als.	Cor-pora-tions.	All oth-ers.				
United States, 1914.....		5,426	2,264	3,098	39,718	7,831	25,211	6,676	19.7	63.5	16.8	\$877,679,709	\$113,784,139	\$645,047,622	\$118,847,948	13.0	73.5	13.5				
1909.....		5,908	2,271	3,512	39,453	9,053	22,880	7,520	22.9	58.0	19.1	883,584,405	149,987,044	538,189,883	145,407,478	17.0	66.6	16.5				
California.....		31	79	22	1,067	50	989	28	4.7	92.7	2.6	24,078,735	1,302,460	22,004,744	771,531	5.4	91.4	3.2				
Colorado.....		15	58	10	393	18	364	11	4.6	92.6	2.8	7,535,633	295,984	7,048,962	190,687	3.9	93.5	2.5				
Illinois.....		193	97	116	2,398	420	1,660	318	17.5	69.2	13.3	49,493,224	7,281,852	37,022,238	5,189,134	14.7	74.8	10.5				
Indiana.....		218	124	170	2,281	412	1,416	453	18.1	62.1	19.9	37,488,223	4,542,764	27,284,751	5,660,708	12.1	72.8	15.1				
Iowa.....		117	40	70	790	124	531	135	15.7	67.2	17.1	14,336,576	1,771,662	10,595,646	1,969,268	12.4	73.9	13.7				
Kansas.....		142	119	99	2,357	260	1,767	330	11.0	75.0	14.0	72,894,736	5,211,923	58,562,532	9,120,281	7.2	80.3	12.5				
Kentucky.....		177	87	178	1,447	262	770	415	18.1	53.2	28.7	21,229,203	2,575,957	13,332,434	5,320,812	12.1	62.8	25.1				
Maryland.....		174	32	41	473	211	192	70	44.6	40.6	14.8	8,163,869	3,684,638	3,541,657	937,574	45.1	43.4	11.5				
Michigan.....		203	83	141	1,370	332	731	307	24.2	53.4	22.4	27,381,474	5,609,028	16,384,336	5,388,110	20.5	59.8	19.7				
Minnesota.....		105	105	76	4,564	282	3,984	298	6.2	87.3	6.5	148,243,708	5,999,856	134,861,980	7,381,872	4.0	91.0	5.0				
Missouri.....		284	152	205	2,096	393	1,345	358	18.8	64.2	17.1	38,686,309	4,328,928	27,838,468	6,518,913	11.2	72.0	16.9				
Nebraska.....		95	55	61	682	155	390	137	22.7	57.2	20.1	15,022,126	2,459,519	10,093,307	2,469,300	16.4	67.2	16.4				
New York.....		515	130	246	3,070	650	2,014	406	21.2	65.6	13.2	77,408,764	10,590,186	58,721,082	8,097,496	13.7	75.9	10.5				
North Carolina.....		136	54	103	588	221	190	177	37.6	32.3	30.1	8,963,501	2,640,852	3,784,363	2,538,286	29.5	42.2	28.3				
North Dakota.....		13	37	9	424	38	354	32	9.0	83.5	7.5	12,029,905	1,005,772	10,345,596	678,537	8.4	86.0	5.6				
Ohio.....		263	137	249	2,363	478	1,294	591	20.2	54.8	25.0	45,171,200	6,438,927	28,824,681	9,907,592	14.3	63.8	21.9				
Oklahoma.....		117	66	70	700	97	508	95	13.9	72.6	13.6	16,688,690	1,086,923	14,022,694	1,579,073	6.5	84.0	9.5				
Oregon.....		34	40	21	450	46	372	32	10.2	82.7	7.1	11,192,573	1,050,634	9,586,401	555,488	9.4	85.6	5.0				
Pennsylvania.....		878	75	312	2,695	1,139	755	701	43.9	29.1	27.0	43,626,356	15,824,454	16,785,970	11,016,932	36.3	38.5	25.3				
Tennessee.....		257	70	185	1,497	312	905	280	20.8	60.5	18.7	26,413,574	3,847,636	18,506,701	4,059,237	14.6	70.1	15.4				
Texas.....		78	71	42	1,300	154	941	205	11.8	72.4	15.8	35,110,801	1,995,021	27,061,885	6,053,395	5.7	77.1	17.2				
Virginia.....		327	58	148	1,082	422	306	354	39.0	28.3	32.7	18,084,413	5,792,360	5,294,456	6,997,597	32.0	29.3	38.7				
Washington.....		28	56	16	923	55	846	27	5.9	91.2	2.9	23,665,382	1,519,030	21,735,290	411,062	6.4	91.8	1.7				
West Virginia.....		112	41	78	381	101	200	80	26.5	52.5	21.0	7,052,814	1,391,957	4,668,226	994,631	19.7	66.2	14.1				
Wisconsin.....		122	61	70	1,110	170	709	237	15.2	63.5	21.2	28,697,413	2,981,868	21,417,656	4,297,889	10.4	74.6	15.0				

There was considerable variation in the relative importance of the establishments operated by individuals, corporations, and other forms of ownership, respectively, in the different states. Thus, in Minnesota, the principal flour producing state, establishments controlled by corporations constituted 36.7 per cent of the total number of establishments, gave employment to 87.3 per cent of the wage earners, and reported 91 per cent of the total value of products. On the other hand, corporations controlled only 5.9 per cent of the establishments in Pennsylvania, and these establishments gave employment to only 29.1 per cent of the wage earners, and contributed only 38.5 per cent of the total value of products.

Size of establishments.—The tendency of the industry to become concentrated in large establishments is indicated by the statistics given in Table 9.

Of the 10,788 flour and grist mills reported for 1914, 153 or 1.4 per cent, manufactured products valued at \$1,000,000 or over. There were 138 establishments

of this class out of a total of 11,691 in 1909. While such establishments represented a comparatively small proportion of the total number at both censuses, they reported a considerable proportion of the total value of products—42.9 per cent in 1914 and 36.1 per cent in 1909. The comparatively small establishments, those manufacturing products valued at less than \$20,000, constituted more than one-half (56.1 per cent) of the total number of the mills reporting in 1914, but the value of their products amounted to only 6 per cent of the total. The great bulk of the output of the mills was turned out by establishments having products valued at \$100,000 or over, such establishments reporting 77.2 per cent of the total value of products in 1914 and 72.6 per cent in 1909.

The average value of products per establishment increased from \$75,578 in 1909 to \$81,357 in 1914, and the average value added by manufacture from \$9,923 to \$11,625. The average quantity of grain

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ground per establishment increased from 68,963 bushels in 1909 to 75,911 bushels in 1914. The average number of wage earners per establishment also shows an increase from 3.4 in 1909 to 3.7 in 1914.

Table 9

VALUE OF PRODUCT.	Census year.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.	VALUE OF PRODUCT.	Census year.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
Total.....	1914 1909	10,788 11,691	39,718 39,453	\$377,679,709 \$383,584,405	\$125,409,688 \$116,007,926	Per cent distribution: Less than \$5,000.....	1914 1909	17.4 14.1	2.4 2.1	0.6 0.5	1.0 0.8
Less than \$5,000.....	1914 1909	1,876 1,651	961 847	5,347,012 4,781,883	1,245,806 962,213	\$5,000 to \$20,000.....	1914 1909	38.7 37.1	11.6 11.4	5.4 5.7	7.5 8.0
\$5,000 to \$20,000.....	1914 1909	4,175 4,333	4,598 4,489	47,675,997 50,280,039	9,375,467 9,314,478	\$20,000 to \$100,000.....	1914 1909	32.7 37.7	24.4 28.6	16.8 21.2	19.8 26.5
\$20,000 to \$100,000.....	1914 1909	3,529 4,411	9,680 11,300	147,254,921 187,287,491	24,841,349 30,761,856	\$100,000 to \$1,000,000.....	1914 1909	9.8 9.9	31.4 32.4	34.3 36.5	31.1 31.0
\$100,000 to \$1,000,000.....	1914 1909	1,055 1,158	12,404 12,788	301,075,171 322,187,339	39,040,509 30,418,431	\$1,000,000 and over.....	1914 1909	1.4 1.2	30.2 25.4	42.9 26.1	40.6 30.6
\$1,000,000 and over.....	1914 1909	153 138	12,015 10,029	376,326,608 319,047,659	50,906,557 35,550,948						

Table 10 shows the size of establishments in 1914 and 1909, as measured by the number of wage earners employed for the industry as a whole and for the leading states.

Table 10

Table 10	STATE.	Cen- sus year.	TOTAL.		ESTABLISHMENTS EMPLOYING—															
			Estab- lish- ments.	Wage earn- ers (aver- age num- ber).	No wage earn- ers.	1 to 5 wage earn- ers.		6 to 20 wage earn- ers.		21 to 50 wage earn- ers.		51 to 100 wage earn- ers.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		
						Estab- lish- ments.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.
United States.....	1914 1909	10,788 11,691	39,718 39,453	1,887 1,849	7,667 8,591	14,366 16,156	953 996	9,625 9,867	195 189	6,046 5,957	65 50	4,515 3,369	16 12	2,202 1,642	3 1	1,191 482	2 3	1,773 1,990		
California.....	1914 1909	132 125	1,067 948	11 6	90 78	192 174	19 28	191 283	8 11	251 333	2 2	171 158	2 2	262						
Colorado.....	1914 1909	83 77	393 282	8 12	57 50	102 101	14 15	145 181	4 15	146										
Illinois.....	1914 1909	406 461	2,398 2,464	69 70	249 237	503 634	57 66	627 684	23 22	678 718	8 6	590 428								
Indiana.....	1914 1909	512 563	2,281 2,298	51 42	388 436	873 976	57 70	504 597	9 10	284 310	4 3	242 187	3 2	378 228						
Iowa.....	1914 1909	227 277	790 647	44 55	160 199	267 330	17 19	176 173	4 4	151 144	1 1	57 139	1 1							
Kansas.....	1914 1909	360 501	2,357 2,360	45 97	207 293	357 541	84 87	1,037 1,005	17 21	511 612	7 3	452 202								
Kentucky.....	1914 1909	442 440	1,447 1,401	81 63	315 333	704 766	40 40	334 349	4 2	114 51	1 1	85 85	1 1	210 150						
Maryland.....	1914 1909	247 295	473 506	70 82	165 199	307 320	11 12	117 99	1 1	49 27										
Michigan.....	1914 1909	427 520	1,370 1,530	56 62	329 415	651 798	33 34	308 326	7 7	222 269	1 2	78 137	1 1	111						
Minnesota.....	1914 1909	286 322	4,504 4,345	28 22	178 223	403 491	50 46	535 510	18 18	596 522	7 7	508 469	2 3	297 395	1 1	452 482	2 2	1,773 1,476		
Missouri.....	1914 1909	641 680	2,096 2,193	134 131	431 468	841 858	57 65	569 695	15 12	412 342	4 3	274 202		101						
Nebraska.....	1914 1909	211 249	682 839	35 52	151 160	342 342	19 35	154 307	5 5	124 307	1 1	62 60	1 1	130						
New York.....	1914 1909	891 933	3,070 2,990	171 156	649 702	1,101 1,255	54 47	540 448	12 13	405 399	2 3	157 190	1 1	128 194	2 1	739 482	1 1	504		
North Carolina.....	1914 1909	203 249	588 496	31 22	248 214	452 369	14 13	136 127												
North Dakota.....	1914 1909	59 84	424 435	3 12	37 51	90 116	12 15	107 140	6 5	172 127	1 1	55 52								
Ohio.....	1914 1909	649 673	2,363 2,585	78 59	487 529	1,053 1,182	69 68	628 645	8 13	215 427	7 3	467 181	1 1	150						
Oklahoma.....	1914 1909	253 295	700 842	62 44	164 216	252 376	21 31	246 331	6 3	202 83		52								
Oregon.....	1914 1909	95 114	450 594	13 15	67 86	127 180	11 9	105 86	2 3	71 73	1 1	147 55								
Pennsylvania.....	1914 1909	1,265 1,450	2,595 2,432	310 359	879 1,033	1,528 1,709	66 53	607 470	7 4	212 168	2 1	131 55	1 1	117						
Tennessee.....	1914 1909	512 454	1,497 1,577	130 66	343 350	621 680	30 28	315 263	4 6	105 238	4 3	283 206	1 1	173 190						
Texas.....	1914 1909	191 233	1,300 1,216	26 29	108 154	225 309	41 31	465 287	13 1	429 32	3 1	181 71								
Virginia.....	1914 1909	533 458	1,082 1,014	99 74	401 352	692 624	31 29	287 254	1 2	32 68	1 1	71 68								
Washington.....	1914 1909	100 96	928 644	8 5	59 62	126 145	23 23	266 266	6 5	188 178	2 1	134 55	2 1	214						
West Virginia.....	1914 1909	229 207	351 452	62 32	154 100	245 277	12 13	106 114	1 2	30 40										
Wisconsin.....	1914 1909	252 322	1,116 1,184	40 54	179 237	335 442	27 23	282 253	2 3	4 117	4 5	286 372	1 1	173						

In 1914 there were 1,887 establishments or 17.5 per cent of the total number for which no wage earners were reported. These were comparatively small plants in which the work was done by the proprietors or firm members. Some of these establishments employed a few wage earners for a short time, but the number was so small and the period of employment so short that in computing the average number as described in the "Explanation of terms," no wage earners could be shown for the industry. Of the total number 71.1 per cent employed from 1 to 5, and 8.8 per cent employed from 6 to 20. There were only 86 establishments that employed an average of more than 50 wage earners and of these only 21 employed more than 100

Three-fifths, or 60.4 per cent of the wage earners reported for the industry, were in establishments employing from 1 to 20 persons; 15.2 per cent in establishments employing from 21 to 50; and 24.4 per cent in establishments employing more than 50 wage earners. The most important change in the figures presented, when compared with those for 1909, is the

average number of wage earners in establishment employing more than 50 wage earners, which increased from 18.9 per cent of the total in 1909 to 24.4 per cent in 1914.

The states which lead in the flour and grist mill products are naturally the ones in which the large establishments are located. Minnesota and New York are the only states to report establishments employing more than 250 wage earners. Of the 16 establishments employing from 101 to 250 wage earners each, 3 were in Indiana and 2 each in California, Minnesota, and Washington. In a majority of the states the small establishments—those employing from 1 to 5 wage earners—greatly predominate.

Engines and power.—Table 11 shows for 1914, 1909, and 1904, for the industry, the number and total horsepower of engines or motors, employed in generating power (including electric motors operated by purchased current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting.

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
				Amount.			Per cent distribution.		
	1914	1909	1904	1914	1909	1904	1914	1909	1904
Primary power, total.....	18,048	18,080	15,207	822,384	853,584	775,318	100.0	100.0	100.0
Owned.....	14,136	16,589	14,818	708,965	800,383	758,755	86.2	93.8	97.9
Steam engines and turbines ¹	4,580	6,758	6,539	403,186	473,571	474,077	49.0	55.5	61.1
Internal-combustion engines.....	2,922	2,540	1,006	76,451	62,681	26,326	9.3	7.3	3.4
Water wheels, turbines, and motors.....	6,634	7,291	7,273	229,328	264,131	258,352	27.9	30.9	33.3
Rented.....	3,912	1,491	389	113,419	53,201	16,563	13.8	6.2	2.1
Electric.....	3,912	1,491	389	112,441	49,901	15,584	13.7	5.8	2.0
Other.....				978	3,300	979	0.1	0.4	0.1
Electric.....	4,919	2,026	621	150,245	67,066	20,308	100.0	100.0	100.0
Rented.....	3,912	1,491	389	112,441	49,901	15,584	74.8	74.4	76.7
Generated by establishments reporting.....	1,007	535	232	37,807	17,165	4,724	25.2	25.6	23.3

¹ Figures for horsepower include for 1909 and 1904 the amounts reported under the head of "other" owned power.

During the decade 1904-1914 the total primary power used in the flour-mill and gristmill industry increased 18.7 per cent, but for the latter half of the decade, 1909 to 1914, there was a decrease of 31,200 horsepower, or 3.7 per cent. Steam and water power have constituted a decreasing proportion from census to census since 1904, but these two classes of power represented 76.9 per cent of the total reported for the industry in 1914. The proportion of the total horsepower reported for internal-combustion engines increased from 3.4 per cent in 1904 to 9.3 per cent in 1914 and there was a marked increase also in the relative importance of electric motors operated by purchased current (rented electric power), the horsepower of which increased from 15,584, or 2 per cent of the total, in 1904 to 112,441, or 13.7 per cent of the total, in 1914.

Fuel.—Table 12 shows for 1914 the quantity of each kind of fuel used for which data were obtained, for the industry as a whole, and for 25 separate states.

STATE.	COAL.		Coke (tons, 2,000 lbs.).	Oil, including gasoline (barrels).	Gas (1,000 cubic feet).
	Anthracite (tons, 2,240 lbs.).	Bituminous (tons, 2,000 lbs.).			
United States.....	56,953	1,809,968	13,941	441,693	1,627,252
California.....		237		84,712	3,522
Colorado.....		20,753	2,476	785	
Illinois.....	6	206,412	558	1,726	233
Indiana.....	1,268	189,101	524	2,224	17,618
Iowa.....	20	52,346	2,005	2,302	
Kansas.....	20	119,808	1,314	185,373	570,910
Kentucky.....		78,911	2,185	4,967	20,396
Maryland.....	2,470	14,028		1,136	2,353
Michigan.....	529	59,027	1,074	2,985	423
Minnesota.....	3,017	249,002	54	1,601	
Missouri.....	74	134,496	2	4,919	14,209
Nebraska.....	50	38,067	4	22,059	300
New York.....	5,555	84,653	175	6,731	56,326
North Carolina.....	153	7,083	70	1,610	
North Dakota.....	1,062	64,547		680	
Ohio.....	880	148,071	330	3,082	238,027
Oklahoma.....		27,854		19,435	250,150
Oregon.....		153		3,628	
Pennsylvania.....	34,946	54,344	273	3,287	122,621
Tennessee.....		61,272	700	1,835	25
Texas.....		62,944	748	47,992	158,993
Virginia.....	349	18,306	11	2,037	1,125
Washington.....		1,878		19,683	1,000
West Virginia.....		8,257	105	508	139,526
Wisconsin.....	2,874	45,643	157	1,612	

Bituminous coal was the principal fuel used in 1914. Minnesota was the largest consumer of this class of fuel, using 249,002 tons, or 13.8 per cent of the total, with Illinois second in quantity, consuming 206,412

tons, or 11.4 per cent of the total. The largest quantity of anthracite coal was used in Pennsylvania, amounting to 34,946 tons, or 61.4 per cent of the total. Kansas used the largest quantity of both oil and gas.

SPECIAL STATISTICS OF MATERIALS AND PRODUCTS.

The special schedule used in collecting statistics for the flour-mill and gristmill industry required details concerning the materials used and the value of the different products manufactured. In addition to the figures shown for the industry, there were 40 establishments engaged primarily in other industries, which manufactured flour-mill and gristmill products valued at \$9,046,449. Also a large quantity of grain was used by establishments whose chief products were breakfast foods, classified in the general report on manufactures as "food preparations." While there are no figures available to show the various kinds and quantities of grain used in other branches of manufacture, there were more than 44,000,000 bushels of corn consumed in the manufacture of glucose and starch alone.

Table 13 shows the quantity of each of the principal kinds of grain ground, and the quantity and the value of the products manufactured.

Table 13	1914	1909	1904	1899
GRAIN GROUND.				
Total.....bushels..	818,929,321	806,247,961	754,945,729	729,061,820
Wheat.....bushels..	545,728,431	496,480,314	494,095,083	471,306,986
Corn.....bushels..	180,115,704	209,281,237	178,217,321	180,573,076
Rye.....bushels..	12,813,831	11,503,969	11,480,370	10,088,381
Buckwheat.....bushels..	5,478,045	7,156,062	6,531,305	5,480,156
Barley.....bushels..	20,283,396	24,509,770	18,628,552	10,067,348
Oats.....bushels..	50,227,050	50,241,598	45,381,009	47,175,766
Other grain.....bushels..	4,277,894	7,075,011	612,089	4,360,107
PRODUCTS.				
Total.....value..	\$877,079,709	\$883,584,405	\$713,033,395	\$501,396,304
Wheat flour.....barrels..	116,403,770	105,756,645	104,013,278	99,763,777
value.....	\$543,859,568	\$550,116,254	\$480,258,514	\$333,997,686
Corn meal and corn flour, barrels..	16,327,993	21,552,737	23,624,693	27,838,811
value.....	\$54,963,301	\$66,941,095	\$56,368,556	\$52,167,739
Rye flour.....barrels..	1,937,385	1,532,139	1,503,100	1,443,339
value.....	\$7,845,213	\$6,383,538	\$5,892,108	\$4,145,565
Buckwheat flour.....pounds..	125,622,189	176,081,891	175,354,062	143,190,724
value.....	\$3,754,857	\$4,663,561	\$4,379,359	\$3,190,152
Barley meal.....pounds..	14,000,789	28,550,952	68,508,655	91,275,646
value.....	\$242,343	\$486,000	\$922,884	\$963,710
Hominy and grits.....pounds..	870,364,453	827,987,702	758,861,398	291,726,145
value.....	\$13,767,561	\$12,509,493	\$8,455,420	\$2,567,084
Oatmeal.....pounds..	30,451,581	(¹)	(¹)	(¹)
value.....	\$757,804			
Bran and middlings.....tons..	4,666,534	9,236,411	7,925,412	7,157,488
value.....	\$104,702,735	\$230,356,342	\$152,201,659	\$99,690,617
Feed and offal.....tons..	4,753,280			
value.....	\$137,067,959			
Corn oil.....gallons..	2,801,949	(¹)	(¹)	(¹)
value.....	\$152,208			
Breakfast foods.....pounds..	92,676,085	(¹)	(¹)	(¹)
value.....	\$2,932,238			
All other cereal products, value..	\$2,091,922	(¹)	(¹)	(¹)
All other products.....value..	\$5,562,000	\$12,128,122	\$4,554,895	\$4,673,751

¹ Not reported separately.

² Three reports were received for corn oil, one report each from the states of New York, Pennsylvania, and Wisconsin.

The total quantity of grain consumed in the flour-mill and gristmill industry in the United States during the census year 1914 represented an increase of 63,983,592 bushels, or 8.5 per cent, during the last decade.

Wheat, the principal grain used, showed an increase of 51,633,348 bushels, or 10.4 per cent from 1904 to 1914. Corn represented 22 per cent of the total in 1914, but the amount ground increased only 1.1 per cent during the decade and showed a decrease of 13.9 per cent from 1909 to 1914. Oats, barley, rye, and buckwheat, in the order named, ranked next in the number of bushels reported. The quantity of oats ground in 1914 was greater by 4,846,041 bushels, or 10.7 per cent, than in 1904, but the relative increase was negligible. The amount of barley increased during the decade 8.9 per cent, and the proportion which it formed of the total quantity of grain used was 2.5 per cent at each of the last three censuses. The quantity of rye consumed in 1914 increased 11.6 per cent, while buckwheat decreased 16.1 per cent in the last decade.

While the schedule called for the selling value or price of the product at the mill, it was not always possible to obtain this value, and in some instances the amount received at the place of delivery was reported. Likewise, even when the selling prices at the point of production were obtained, they were in some cases retail prices and in others wholesale rates. For this reason no attempt has been made to compute from the reported total values the average value per unit for the different classes of products.

The production of wheat flour in 1914 shows an increase of 12,390,492 barrels, or 11.9 per cent, over the quantity reported for 1904. The quantity of wheat flour shown in Table 13 for 1914 includes 573,979 barrels of graham flour; for 1909, 451,500 barrels; and for 1904, 404,928 barrels. There were six establishments which reported the manufacture of over 1,000,000 barrels of wheat flour each in 1914, and these mills used 16.9 per cent of the wheat consumed in the flour mills of the United States in that year.

Summary, by states.—Table 14 shows, by states, the quantities of wheat and corn ground in 1914, 1909, and 1904, and also the quantities of other grains ground in 1914.

Table 14	STATE.	WHEAT (BUSHELS).			CORN (BUSHELS).			OTHER GRAIN (BUSHELS): 1914.				
		1914	1909	1904	1914	1909	1904	Rye.	Buckwheat.	Barley.	Oats.	All other.
	United States.....	545,728,431	496,480,314	494,095,083	180,115,704	209,281,237	178,217,321	12,613,831	5,478,045	20,288,306	50,227,050	4,277,584
	Alabama.....	115,100	78,326	138,420	1,925,919	2,783,224	2,258,428				344,600	70
	Arizona.....	385,508	385,183	358,747	8,758	8,550	5,816			622,453	2,000	
	Arkansas.....	1,401,408	1,134,890	1,867,689	4,564,091	4,723,726	2,400,269				10,050	60,000
	California.....	9,554,542	8,866,746	11,825,938	930,666	804,009	825,432	36,054	12,050	11,684,003	1,278,900	170,616
	Colorado.....	5,737,849	4,574,480	4,635,278	1,367,084	1,570,185	922,926	4,804		273,497	239,224	7,622
	Connecticut.....	718	16,141	6,531	1,984,451	2,139,404	2,289,271	12,312	6,503	2,354	284,308	16,100
	Delaware.....	734,619	882,483	832,689	498,815	566,202	759,523	3,365	19,605		23,370	
	Florida.....		20		161,561	123,754	174,936				10,890	
	Georgia.....	1,616,748	2,088,586	3,186,908	3,666,287	5,135,892	5,138,934				43,380	8,710
	Idaho.....	2,909,253	1,890,276	1,509,784	50,943	16,585	10,900	1,737		393,339	428,029	7,943
	Illinois.....	31,020,794	30,303,512	28,380,202	10,257,035	12,637,221	12,816,823	823,406	38,476	75,806	1,027,675	256,263
	Indiana.....	21,199,657	22,905,586	25,156,032	14,052,854	13,388,248	11,177,094	193,583	41,925	47,600	769,000	21,812
	Iowa.....	7,117,783	7,063,273	8,689,866	3,344,173	3,350,442	2,463,049	140,560	41,935	141,713	4,206,032	51,678
	Kansas.....	59,945,127	49,676,585	36,197,651	6,952,316	10,584,717	8,790,775	92,574	9,106	21,577	178,729	179,669
	Kentucky.....	13,114,197	13,575,601	12,611,709	4,760,161	4,971,835	4,219,824	35,605	2,000	11,115	122,060	1,040
	Louisiana.....		104,000		597,057	800,840	80,430				107,500	
	Maine.....	44,430	66,898	136,230	4,198,565	4,757,998	4,545,168	1,900	28,203	5,780	1,162,860	
	Maryland.....	5,310,157	5,429,008	5,110,610	1,610,070	1,997,086	1,898,891	144,659	62,289	28,855	174,192	3,177
	Massachusetts.....	56,701	38,441	37,429	4,042,175	5,265,210	6,247,591	43,259	11,620	37,395	380,859	616
	Michigan.....	14,621,098	16,733,707	19,092,087	5,395,035	8,580,049	6,256,432	709,594	639,909	172,280	3,763,043	241,366
	Minnesota.....	124,339,078	104,042,999	110,046,339	3,092,696	3,440,937	2,646,411	3,074,674	69,313	821,038	3,270,863	313,980
	Missouri.....	25,277,533	27,004,019	29,507,080	8,532,276	10,474,264	8,013,960	64,401	306,886	11,883	92,221	5,110
	Montana.....	4,142,848	1,701,589	1,462,979	5,731		3,117	3,595		44,191	281,013	5,182
	Nebraska.....	11,404,925	10,741,279	8,658,038	2,247,669	5,198,794	4,643,455	154,040	2,975	20,100	92,057	44,929
	Nevada.....	193,819	294,075	237,190		5,827	7,299	100		130,854	22,119	
	New Hampshire.....	402,325	400,548	382,785	2,208,037	2,921,923	2,807,347	8,933	1,655	5,130	644,589	61,500
	New Jersey.....	532,821	1,377,248	1,711,041	2,447,371	3,336,651	3,523,460	541,439	78,938	9,000	522,428	53,241
	New Mexico.....	290,889	259,944	250,676	25,779	77,686	73,777				569	5,000
	New York.....	38,185,270	30,073,407	26,036,183	21,065,163	21,593,807	19,747,956	1,403,324	1,817,158	665,609	11,712,375	1,087,649
	North Carolina.....	4,703,195	3,715,264	3,453,793	2,538,134	2,749,135	2,966,052	36,430	4,953	5,810	40,370	28,395
	North Dakota.....	10,396,683	8,821,071	5,844,493	55,827	94,809	4,300	6,885	2,140	113,202	160,232	2,000
	Ohio.....	27,780,349	27,271,412	27,610,184	9,544,909	11,326,991	10,443,366	357,723	222,159	142,625	3,171,189	153,529
	Oklahoma.....	9,590,956	10,074,282	9,111,710	5,576,923	8,329,146	3,472,037	2,870		200	100,600	205,133
	Oregon.....	6,638,891	6,414,694	8,059,304	48,685	54,445	27,279	28,097	90	1,067,535	1,369,209	70,220
	Pennsylvania.....	19,344,465	18,320,116	19,207,373	14,638,839	15,665,222	14,658,274	1,732,083	1,529,662	190,470	4,881,863	315,779
	Rhode Island.....	505	170	1,970	815,543	1,108,958	1,590,601	1,225		200	76,543	
	South Carolina.....	99,769	27,900	258,438	267,008	315,590	483,062				825	425
	South Dakota.....	4,488,997	4,697,391	5,705,270	153,557	208,873	285,624	10,354	1,700	88,498	97,939	20,774
	Tennessee.....	14,578,618	14,359,868	15,144,660	8,023,114	9,971,656	9,062,184	3,225	4,291	20,974	105,728	137,949
	Texas.....	15,975,767	16,243,203	15,365,908	8,626,359	9,961,386	4,182,282	4,590	215		440,998	422,937
	Utah.....	2,524,748	2,258,841	2,251,616	35,709	47,883	35,286	9,584		398,456	120,316	
	Vermont.....	15,329	1,565	15,920	3,799,582	4,211,911	4,118,390	1,660	20,528	124,460	1,215,715	17,358
	Virginia.....	10,232,083	9,672,288	8,589,439	5,127,104	5,876,745	5,086,297	136,193	24,126	66,061	196,467	25,590
	Washington.....	17,566,736	12,854,599	13,887,182	475,381	352,969	269,901	48,035	31,475	1,885,249	1,880,690	57,170
	West Virginia.....	2,535,501	3,088,082	3,039,288	3,299,968	3,292,377	2,791,879	69,242	140,523	17,080	757,851	500
	Wisconsin.....	13,806,270	16,262,688	17,896,060	6,728,233	8,847,801	3,430,171	2,869,957	305,637	933,464	4,219,994	197,932
	Wyoming.....	491,772	493,130	222,478	21,065	128,181	18,915	1,135		8,540	140,520	2,000
	All other states.....	1,000	222,000	367,000	347,086	452,095	543,118	325			44,850	17,000

¹ Includes the District of Columbia and Mississippi.

Table 15 shows, by states, the quantity and value of wheat flour and of corn meal and corn flour reported for 1914, 1909, and 1904; and Table 16, on the opposite page, gives for 1914 similar statistics for rye flour, buckwheat flour, barley meal, hominy and grits, bran and middlings, and feed and offal.

Table 15	STATE.	WHEAT FLOUR.						CORN MEAL AND CORN FLOUR.					
		1914		1909		1904		1914		1909		1904	
		Quantity (barrels).	Value.	Quantity (barrels).	Value.	Quantity (barrels).	Value.	Quantity (barrels).	Value.	Quantity (barrels).	Value.	Quantity (barrels).	Value.
	United States.....	116,403,770	\$543,839,568	105,756,645	\$550,116,254	104,013,278	\$480,258,514	16,327,993	\$54,963,301	21,552,737	\$66,941,095	23,624,093	\$56,368,556
	Alabama.....	18,194	102,209	16,296	97,350	28,483	158,320	318,466	1,239,191	534,288	1,856,501	364,992	941,779
	Arizona.....	79,414	493,648	79,526	530,244	72,898	422,111	2,414	9,756	1,902	9,121	813	4,225
	Arkansas.....	291,964	1,510,427	239,003	1,302,917	378,030	1,870,626	468,338	1,544,045	514,502	1,666,670	353,628	831,938
	California.....	1,783,007	10,341,920	1,805,248	10,375,701	2,439,499	10,611,671	93,165	410,157	50,969	222,399	52,254	215,845
	Colorado.....	1,229,225	4,923,302	977,779	5,172,638	970,088	4,377,477	16,443	61,354	21,958	74,764	15,419	47,658
	Connecticut.....	44	318	3,465	18,405	1,374	7,164	196,170	630,466	299,647	912,105	537,972	1,321,554
	Delaware.....	157,852	797,625	174,224	1,011,511	168,944	865,794	67,790	229,967	77,399	239,772	92,686	225,996
	Florida.....			40				26,082	114,663	24,832	73,654	15,534	47,279
	Georgia.....	348,421	2,155,527	415,220	2,634,638	671,809	3,747,466	819,110	3,012,837	1,369,971	4,609,764	1,217,141	3,193,061
	Idaho.....	571,965	2,261,403	386,022	1,819,581	300,476	1,225,672	8,048	18,809	180	1,016	800	2,400
	Illinois.....	6,643,983	31,904,077	6,386,547	33,992,494	5,954,680	27,619,401	600,515	1,942,702	738,884	2,168,824	1,068,286	2,319,104
	Indiana.....	4,526,879	21,183,688	4,794,847	25,315,671	5,181,906	25,282,880	984,239	3,030,305	855,400	2,483,265	909,622	2,076,266
	Iowa.....	1,488,811	7,149,334	1,523,264	7,958,975	1,717,688	8,371,616	318,590	1,089,155	194,301	682,328	210,926	453,045
	Kansas.....	12,777,582	56,514,360	10,887,744	52,589,913	7,633,415	32,627,365	388,756	1,371,077	576,941	1,767,903	605,413	1,292,243
	Kentucky.....	2,728,464	13,880,767	2,832,288	15,921,025	2,641,504	13,209,196	774,322	2,645,405	934,217	3,071,856	1,003,020	2,314,364
	Louisiana.....			22,282	116,965			10,807	35,236	35,255	106,403		
	Maine.....	8,820	54,598	13,976	87,956	24,917	147,905	659,195	2,150,281	818,597	2,379,095	960,416	2,377,373
	Maryland.....	1,105,577	5,162,538	1,130,165	6,097,871	1,015,952	4,840,634	170,431	605,583	230,332	741,075	298,196	722,981
	Massachusetts.....	14,272	73,477	9,887	50,616	8,435	46,994	720,254	2,146,998	1,165,283	3,491,181	1,383,647	3,411,109
	Michigan.....	3,056,744	16,056,643	3,447,800	18,838,591	3,901,219	17,155,090	131,646	461,630	177,189	606,708	210,116	506,615

FLOUR-MILL AND GRISTMILL PRODUCTS.

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Table 15—Con.

STATE.	WHEAT FLOUR.						CORN MEAL AND CORN FLOUR.					
	1914		1909		1904		1914		1909		1904	
	Quantity (barrels).	Value.	Quantity (barrels).	Value.	Quantity (barrels).	Value.	Quantity (barrels).	Value.	Quantity (barrels).	Value.	Quantity (barrels).	Value.
Minnesota.....	27,132,155	\$117,088,654	22,737,404	\$114,185,351	23,871,227	\$103,401,447	53,845	\$185,008	66,705	\$204,863	66,018	\$154,243
Missouri.....	5,402,391	25,693,116	5,672,269	30,054,028	6,175,541	28,512,755	763,678	2,641,988	1,020,738	3,129,694	935,318	2,343,395
Montana.....	871,918	3,919,318	375,440	1,860,681	297,806	1,723,722	318	1,509			682	2,511
Nebraska.....	2,383,097	10,044,855	2,207,550	11,451,319	1,739,998	7,939,735	230,968	702,795	425,413	1,222,670	542,099	1,133,437
Nevada.....	40,329	202,624	61,938	360,540	47,456	256,978						
New Hampshire.....	88,432	514,496	80,141	500,879	76,641	450,148	135,191	443,482	511,620	1,485,779	674,192	1,590,989
New Jersey.....	167,330	920,775	275,365	1,524,216	354,231	1,912,982	65,634	234,074	190,451	585,412	244,173	634,727
New Mexico.....	59,445	317,998	55,190	322,556	51,068	268,111	2,707	10,849	771	3,253	4,505	15,006
New York.....	8,522,011	40,798,737	6,696,628	35,659,891	5,678,743	28,177,883	1,470,365	4,382,960	2,090,537	5,967,943	3,094,226	6,928,296
North Carolina.....	951,805	5,231,853	759,072	4,763,956	713,400	3,816,448	543,431	2,043,292	596,872	2,294,832	648,481	1,738,154
North Dakota.....	2,165,078	9,864,400	1,825,920	9,034,418	1,223,219	5,513,554	445	2,129	1,626	5,124		
Ohio.....	5,707,781	27,852,222	5,723,536	30,508,109	5,628,179	27,850,603	524,941	1,696,817	865,250	2,528,843	1,096,703	2,432,026
Oklahoma.....	2,072,240	9,832,201	2,205,039	10,959,367	1,962,317	8,886,633	266,284	964,488	382,721	1,124,244	206,223	497,908
Oregon.....	1,791,334	7,749,619	1,360,281	6,015,845	1,740,849	6,324,932	2,867	14,050	559	2,236	685	3,395
Pennsylvania.....	3,975,031	19,795,116	3,749,842	20,150,978	3,969,229	19,841,668	760,290	2,509,596	767,462	2,369,701	1,097,993	2,691,670
Rhode Island.....	104	760	38	220	339	2,093	25,700	83,003	268,673	728,371	397,917	922,280
South Carolina.....	20,120	103,906	5,590	32,825	53,150	292,490	71,480	283,632	74,617	253,849	113,622	314,571
South Dakota.....	920,070	4,458,144	968,286	5,067,797	1,148,024	5,838,370	5,244	18,555	6,845	23,413	23,398	49,257
Tennessee.....	3,093,197	15,620,227	3,009,089	17,267,395	3,198,677	17,024,123	1,601,617	5,460,920	1,981,746	6,505,710	2,052,765	4,771,722
Texas.....	4,089,378	21,805,623	3,342,035	19,124,834	3,228,380	16,491,820	1,042,654	3,729,947	877,314	2,875,994	599,375	1,477,014
Utah.....	505,224	2,242,417	459,248	2,355,109	453,894	1,963,322	154	886	259	1,239	1,657	5,316
Vermont.....	3,133	17,467	109	1,014	3,026	14,664	458,617	1,453,199	853,051	2,511,964	909,760	2,109,276
Virginia.....	2,161,767	10,702,588	1,898,712	10,263,031	1,777,169	8,855,726	1,099,215	3,861,142	1,410,351	4,456,117	1,218,294	2,844,946
Washington.....	3,765,070	15,685,353	2,804,242	12,484,701	3,024,287	11,154,330	620	3,453	6,240	23,669	7,625	21,034
West Virginia.....	520,949	2,732,789	634,132	3,615,913	626,670	3,390,156	233,582	775,034	318,293	996,375	339,872	841,827
Wisconsin.....	3,056,954	13,817,821	3,499,965	17,909,089	3,744,373	17,611,009	168,531	610,958	85,532	287,740	95,901	246,651
Wyoming.....	106,189	530,528	99,537	505,294	43,758	226,754	1,646	7,829	1,033	4,094	74	204
All other states.....	20	100	44,400	203,796	73,400	350,375	26,113	92,083	86,017	299,544	126,544	293,981

¹ Includes the District of Columbia and Mississippi.

Table 16

STATE.	RYE FLOUR.		BUCKWHEAT FLOUR.		BARLEY MEAL.		HOMINY AND GRITS.		BRAN AND MIDDINGS.		FEED AND OFFAL.	
	Quantity (barrels).	Value.	Quantity (pounds).	Value.	Quantity (pounds).	Value.	Quantity (pounds).	Value.	Quantity (tons).	Value.	Quantity (tons).	Value.
United States.....	1,937,385	\$7,845,213	125,622,189	\$3,754,857	14,000,789	\$242,343	870,364,453	\$13,767,561	4,666,534	\$104,702,735	4,753,280	\$137,067,969
Alabama.....												
Arizona.....					250,000	5,000	1,397,502	41,323	853	19,972	26,054	775,273
Arkansas.....									3,706	97,593	14,753	458,999
California.....	5,682	32,204	25,100	786	3,098,678	50,011	560,165	13,310	22,117	554,543	71,947	2,159,130
Colorado.....	40	235			24,000	490	500	15	80,165	2,180,649	354,523	10,002,906
Connecticut.....	1,348	6,157	35,680	970	100,540	1,949			49,240	1,125,071	47,721	1,422,509
Delaware.....			408,660	11,969			1,396,527	24,792	189	5,826	38,761	1,218,816
Florida.....									7,754	222,506	5,892	184,339
Georgia.....											1,491	42,960
Idaho.....	14	84			754,416	8,450	70,225	1,411	14,491	359,799	19,015	551,081
Illinois.....	146,432	635,985	736,805	24,237			127,735	3,390	25,789	509,407	21,879	585,001
Indiana.....	6,414	30,385	818,423	25,175	19,760	394	154,209,222	2,293,856	270,754	6,184,864	242,201	5,993,094
Iowa.....	13,133	63,451	1,123,875	41,424	284,000	6,201	292,131,101	4,620,324	167,460	4,730,324	170,167	4,682,497
Kansas.....	9,950	35,871	168,600	5,585	80,500	940	16,693,110	188,089	63,857	1,369,505	99,219	2,502,901
Kentucky.....	373	1,985	7,450	227	468,000	8,700	36,755,200	557,828	496,245	9,704,259	174,229	4,651,355
Louisiana.....							14,635,650	238,043	115,442	2,644,343	58,152	1,636,749
Maine.....	264	1,351	415,088	13,578	48,000	775	22,600	453	20	366	21,832	651,332
Maryland.....	2,211	8,820	1,564,878	50,783	40,000	750	241,820	8,600	456	11,114	60,085	2,084,523
Massachusetts.....	7,062	31,856	294,967	15,806	397,700	6,304	2,464,035	46,861	49,202	1,315,693	32,947	973,570
Michigan.....	74,962	377,707	15,773,491	447,545	221,600	6,638	100,000	1,700	450	11,000	45,692	1,374,147
Minnesota.....	579,648	1,991,445	1,953,928	63,006			1,483,329	16,393	1,051,260	22,390,532	219,263	5,517,795
Missouri.....	2,596	10,640					24,883,523	373,432	219,068	5,071,600	188,597	4,898,695
Montana.....	799	2,836							34,543	663,076	8,771	214,252
Nebraska.....	22,515	101,140	74,572	3,412	7,500	99	57,500	1,645	109,741	2,250,742	39,562	951,340
Nevada.....	15	75							1,564	38,952	3,686	103,326
New Hampshire.....	3,190	12,910	32,480	586	15,120	266			3,191	65,520	53,670	1,685,854
New Jersey.....	60,621	306,086	1,942,300	57,858			336,000	5,224	11,137	299,246	77,620	2,410,149
New Mexico.....									2,803	75,119	77,615	20,535
New York.....	212,926	946,174	44,291,164	1,333,354	1,904,032	32,698	79,146,293	1,233,510	328,665	7,864,012	637,394	19,659,671
North Carolina.....	2,250	11,969	55,700	1,765			2,109,250	40,120	42,145	1,045,345	19,550	556,917
North Dakota.....	844	4,037	8,540	500			3,379,549	74,119	80,415	1,594,885	13,575	463,155
Ohio.....	43,074	220,344	5,848,216	171,359	72,360	1,180	83,822,240	1,390,905	255,720	5,886,947	249,551	7,536,048
Oklahoma.....	480	2,010					400,250	7,984	53,282	1,660,005	141,419	3,903,072
Oregon.....	4,127	16,220	2,505	92	1,834,918	34,806	4,740	144	51,758	1,185,918	71,254	1,992,079
Pennsylvania.....	151,877	666,000	36,830,070	1,077,717	270,364	5,762	51,981,949	939,878	182,626	4,642,020	404,928	12,760,946
Rhode Island.....	214	1,269							8	84	23,796	708,757
South Carolina.....							262,480	5,288			224	6,673
South Dakota.....	1,474	6,679	17,820	708					42,684	817,037	7,875	196,329
Tennessee.....	20	84	6,000	240	4,700	67	5,664,872	97,057	124,783	2,890,257	74,659	2,240,065
Texas.....	813	4,117	6,400	200			2,000	40	167,091	4,203,561	171,510	5,225,761
Utah.....	223	1,088			219,200	2,824	8,000	200	21,450	474,493	16,573	410,125
Vermont.....	144	580	456,333	13,844	365,600	6,041	150,000	2,100	710	20,230	82,074	2,604,490
Virginia.....	4,746	21,629	532,950	16,452	734,930	12,680	443,980	9,315	91,142	2,457,337	31,466	933,213
Washington.....	6,343	34,887	2,780	115	1,235,024	28,167			121,537	2,675,237	129,260	3,588,665
West Virginia.....	1,793	8,085	3,680,671	113,953	14,400	210	87,600	1,664	20,111	570,897	82,677	2,392,551
Wisconsin.....	561,475	2,248,927	8,506,653	262,111	1,533,447	20,941	94,855,277	1,533,907	106,354	2,388,856	269,465	7,622,990
Wyoming.....	150	792							3,803	83,695	1,415	42,652
All other states.....							13,608	243	59	1,197	10,511	309,727

¹ Includes the District of Columbia and Mississippi.

Minnesota by far outranked all the other states in the flour-mill and gristmill industry at the last three censuses. During the decade, 1904 to 1914, there was a decrease of 77 in the number of mills in the state, but an increase in the production of wheat flour, amounting to 3,260,928 barrels, or 13.7 per cent. While New York ranked second in the total value of products in 1914, Kansas held second place in production of wheat flour, with 12,777,582 barrels compared with 8,522,011 barrels for New York. Tennessee ranked first in the manufacture of corn meal and corn flour, New York first in buckwheat flour, while Minnesota and Wisconsin produced almost equal quantities of rye flour, the combined output of the two states representing 58.9 per cent of the total quantity of rye flour of the United States.

In addition to the several kinds of products shown

in Tables 15 and 16, there were produced in 1914, 30,451,581 pounds of oatmeal, valued at \$757,804; 92,676,085 pounds of breakfast foods, valued at \$2,932,238; all other cereal products valued at \$2,091,922; and 301,949 gallons of corn oil, valued at \$152,208, which was reported by three establishments, one each in New York, Pennsylvania, and Wisconsin. "All other products" to the amount of \$5,562,000 represent subsidiary products of the flour-mill and gristmill industry, such as lumber and timber products, vinegar and cider, and, in some cases, grain purchased and sold but not ground.

Classification of wheat flour mills, according to output.—Table 17 shows the number of mills producing wheat flour in the more important states for the censuses of 1914, 1909, and 1904, classified according to the number of barrels produced.

STATE.	Census year.	Total number of mills.	MERCHANT MILLS MANUFACTURING WHEAT FLOUR, GROUPED ACCORDING TO NUMBER OF BARRELS PRODUCED.					STATE.	Census year.	Total number of mills.	MERCHANT MILLS MANUFACTURING WHEAT FLOUR, GROUPED ACCORDING TO NUMBER OF BARRELS PRODUCED.				
			Less than 1,000 barrels.	1,000 but less than 5,000 barrels.	5,000 but less than 20,000 barrels.	20,000 but less than 100,000 barrels.	100,000 barrels or more.				Less than 1,000 barrels.	1,000 but less than 5,000 barrels.	5,000 but less than 20,000 barrels.	20,000 but less than 100,000 barrels.	100,000 barrels or more.
United States.....	1914	6,870	1,821	2,920	1,377	540	218	New Jersey.....	1914	66	30	25	10	1	.....
	1909	7,342	1,721	3,145	1,733	550	193		1909	100	42	40	17	1	.....
	1904	7,685	1,272	3,502	2,123	622	166		1904	94	27	42	24	1	.....
Arkansas.....	1914	58	17	30	9	2	.....	New York.....	1914	244	101	69	42	19	13
	1909	51	13	30	6	2	.....		1909	270	105	86	49	19	11
	1904	81	4	54	21	2	.....		1904	304	112	92	64	22	14
California.....	1914	59	10	23	12	9	5	North Carolina.....	1914	239	48	137	49	5	.....
	1909	66	12	22	19	9	4		1909	208	51	120	34	3	.....
	1904	83	8	31	22	18	4		1904	213	48	126	37	2	.....
Colorado.....	1914	48	6	13	12	13	4	North Dakota.....	1914	56	4	17	15	13	7
	1909	48	9	13	14	10	2		1909	64	6	10	26	15	7
	1904	48	5	12	17	13	1		1904	55	1	12	26	13	3
Georgia.....	1914	46	29	10	3	3	1	Ohio.....	1914	549	88	282	145	23	11
	1909	47	20	18	5	3	1		1909	583	66	296	188	33	10
	1904	69	22	35	5	6	1		1904	659	40	353	226	34	6
Idaho.....	1914	51	9	18	15	9	.....	Oklahoma.....	1914	79	23	15	16	18	7
	1909	48	4	19	21	4	.....		1909	92	15	16	34	22	5
	1904	28	.....	10	13	5	.....		1904	86	8	18	31	28	1
Illinois.....	1914	253	64	83	52	42	12	Oregon.....	1914	84	21	30	21	9	3
	1909	309	87	87	76	47	12		1909	104	9	46	38	8	3
	1904	302	48	106	89	47	12		1904	94	7	41	35	9	2
Indiana.....	1914	417	79	197	105	29	7	Pennsylvania.....	1914	824	290	392	114	24	4
	1909	463	52	227	148	28	8		1909	917	332	427	141	14	3
	1904	507	56	213	199	32	7		1904	870	245	457	139	23	6
Iowa.....	1914	150	58	52	25	11	4	South Dakota.....	1914	65	2	28	24	9	2
	1909	195	73	64	44	11	3		1909	86	10	31	33	11	1
	1904	234	58	98	62	13	3		1904	92	4	20	53	14	1
Kansas.....	1914	199	27	23	41	63	45	Tennessee.....	1914	409	119	205	63	17	5
	1909	255	46	32	61	81	35		1909	353	79	181	78	10	5
	1904	248	19	55	75	78	21		1904	361	42	190	113	11	5
Kentucky.....	1914	350	64	180	94	10	2	Texas.....	1914	90	10	21	16	32	11
	1909	353	50	188	99	14	2		1909	102	18	20	33	22	9
	1904	358	53	189	99	14	3		1904	125	7	30	48	32	8
Maryland.....	1914	203	76	87	32	6	2	Utah.....	1914	69	8	28	27	6	.....
	1909	235	79	114	37	3	2		1909	59	3	24	28	4	.....
	1904	182	39	98	39	5	1		1904	63	2	29	29	3	.....
Michigan.....	1914	341	103	142	70	21	5	Virginia.....	1914	428	129	224	59	12	4
	1909	389	96	178	87	21	7		1909	348	103	181	47	13	4
	1904	367	50	173	110	27	7		1904	330	56	201	59	12	2
Minnesota.....	1914	240	29	80	67	30	34	Washington.....	1914	70	13	13	14	22	8
	1909	270	22	96	87	33	32		1909	65	5	14	16	24	6
	1904	338	20	110	130	44	34		1904	65	4	7	26	22	6
Missouri.....	1914	477	122	219	84	39	13	West Virginia.....	1914	163	71	73	14	5	.....
	1909	499	111	237	105	32	14		1909	157	56	70	25	6	.....
	1904	525	66	282	125	42	10		1904	173	56	90	19	8	.....
Montana.....	1914	29	3	9	9	6	2	Wisconsin.....	1914	171	75	60	24	8	4
	1909	12	.....	3	5	4	.....		1909	218	69	95	34	14	7
	1904	12	.....	4	4	4	.....		1904	317	80	154	59	17	.....
Nebraska.....	1914	190	22	74	73	18	3	All other states.....	1914	159	71	61	21	6	.....
	1909	203	14	86	79	23	1		1909	163	64	74	19	6	.....
	1904	222	19	89	97	16	1		1904	180	66	81	28	5	.....

¹ Includes Indian Territory.

Of the 10,788 establishments reporting flour-mill and gristmill products in 1914, there were 3,912 which ground no wheat flour. The number of mills producing wheat flour decreased from 7,685 in 1904 to 6,876 in 1914. In 1914 mills which produced less than 5,000 barrels comprised 69 per cent of the wheat flour mills; the group producing from 5,000 to 20,000 barrels, 20 per cent; 20,000 to 100,000 barrels, 7.8 per cent; and 100,000 barrels or more, 3.2 per cent. The only groups showing an increase are those producing less than 1,000 barrels and those producing 100,000 barrels or more, the latter group having increased in number from 166 in 1904 to 218 in 1914.

Of the 24 most important wheat states only three, Washington, Tennessee, and Virginia, showed in-

creases in the total number of mills producing wheat flour.

Kansas shows a greater increase than any other state in the number of mills producing 100,000 barrels or more between 1909 and 1914. Montana showed no mills of this class in 1904 or 1909, but reported two in 1914.

Output of flour mills producing 1,000 barrels or more of wheat flour in 1914.—In order to eliminate the small merchant mills which grind wheat and other grains chiefly for local trade, Table 18 excludes those whose yearly output of wheat flour is less than 1,000 barrels each, and shows, by states, for 1914 and 1909, the number of mills whose production exceeds that limit.

Table 18						MERCHANT FLOUR AND GRIST MILLS PRODUCING 1,000 BARRELS OR MORE OF WHEAT FLOUR.						MERCHANT FLOUR AND GRIST MILLS PRODUCING 1,000 BARRELS OR MORE OF WHEAT FLOUR.					
STATE.	Census year.	Number of establishments.	Wheat used (bushels).	Wheat flour produced.		STATE.	Census year.	Number of establishments.	Wheat used (bushels).	Wheat flour produced.		STATE.	Census year.	Number of establishments.	Wheat used (bushels).	Wheat flour produced.	
				Quantity (barrels).	Value.					Quantity (barrels).	Value.					Quantity (barrels).	Value.
United States.....	1914	5,055	542,620,843	115,686,750	\$540,107,717	California.....	1914	49	9,530,954	1,778,345	\$10,314,493	California.....	1914	49	9,530,954	1,778,345	\$10,314,493
	1909	5,621	491,224,288	105,084,806	\$46,352,669		1909	54	8,709,682	1,800,349	19,346,764		1909	54	8,709,682	1,800,349	19,346,764
Minnesota.....	1914	211	124,267,178	27,117,914	117,908,516	North Dakota.....	1914	52	10,390,963	2,163,938	9,838,100	North Dakota.....	1914	52	10,390,963	2,163,938	9,838,100
	1909	248	104,261,138	22,771,362	114,426,758		1909	58	8,805,002	1,823,146	9,012,624		1909	58	8,805,002	1,823,146	9,012,624
Kansas.....	1914	172	59,919,438	12,772,478	56,489,465	Oklahoma.....	1914	56	9,572,492	2,068,536	9,814,280	Oklahoma.....	1914	56	9,572,492	2,068,536	9,814,280
	1909	209	49,607,646	10,879,028	52,545,343		1909	77	10,017,098	2,199,965	10,932,512		1909	77	10,017,098	2,199,965	10,932,512
New York.....	1914	143	38,039,814	8,492,489	40,641,848	Oregon.....	1914	63	8,597,961	1,783,023	7,706,536	Oregon.....	1914	63	8,597,961	1,783,023	7,706,536
	1909	165	29,755,919	6,666,696	35,438,542		1909	95	6,285,346	1,357,303	5,909,094		1909	95	6,285,346	1,357,303	5,909,094
Illinois.....	1914	189	30,940,199	6,627,369	31,815,570	Iowa.....	1914	92	7,039,062	1,473,196	7,066,637	Iowa.....	1914	92	7,039,062	1,473,196	7,066,637
	1909	222	30,137,416	6,369,296	33,900,076		1909	122	6,933,594	1,505,009	7,861,456		1909	122	6,933,594	1,505,009	7,861,456
Ohio.....	1914	461	27,581,757	5,667,605	27,640,879	North Carolina.....	1914	191	4,605,653	981,982	5,122,225	North Carolina.....	1914	191	4,605,653	981,982	5,122,225
	1909	527	27,142,976	5,687,729	30,811,038		1909	157	3,562,027	729,624	4,991,525		1909	157	3,562,027	729,624	4,991,525
Missouri.....	1914	355	25,036,518	5,354,186	26,381,818	Maryland.....	1914	127	5,151,046	1,073,760	4,991,525	Maryland.....	1914	127	5,151,046	1,073,760	4,991,525
	1909	388	26,755,418	5,633,884	29,837,155		1909	156	5,230,561	1,091,290	5,887,770		1909	156	5,230,561	1,091,290	5,887,770
Texas.....	1914	80	18,957,182	4,035,185	21,783,232	Colorado.....	1914	42	5,723,302	1,226,731	4,910,323	Colorado.....	1914	42	5,723,302	1,226,731	4,910,323
	1909	84	18,396,223	3,335,231	19,084,912		1909	39	4,636,520	975,067	5,150,809		1909	39	4,636,520	975,067	5,150,809
Indiana.....	1914	338	21,036,091	4,494,402	21,016,635	South Dakota.....	1914	63	4,485,332	919,443	4,455,574	South Dakota.....	1914	63	4,485,332	919,443	4,455,574
	1909	411	22,825,173	4,770,061	25,185,116		1909	76	4,685,650	965,970	5,053,322		1909	76	4,685,650	965,970	5,053,322
Pennsylvania.....	1914	534	18,759,381	3,857,993	19,185,814	Montana.....	1914	26	4,134,087	876,065	3,908,795	Montana.....	1914	26	4,134,087	876,065	3,908,795
	1909	585	17,577,225	3,610,339	19,393,160		1909	12	1,701,589	375,440	1,860,681		1909	12	1,701,589	375,440	1,860,681
Michigan.....	1914	238	14,387,254	3,010,667	15,809,508	West Virginia.....	1914	92	2,857,728	485,699	2,542,048	West Virginia.....	1914	92	2,857,728	485,699	2,542,048
	1909	293	16,621,230	3,393,296	18,540,105		1909	101	2,953,102	608,853	3,468,305		1909	101	2,953,102	608,853	3,468,305
Washington.....	1914	57	17,546,245	3,760,873	15,661,494	Idaho.....	1914	42	2,892,909	568,711	2,247,152	Idaho.....	1914	42	2,892,909	568,711	2,247,152
	1909	60	12,717,225	2,797,782	12,456,660		1909	44	1,874,058	385,037	1,813,831		1909	44	1,874,058	385,037	1,813,831
Tennessee.....	1914	290	14,303,610	3,037,904	15,321,426	Utah.....	1914	61	2,502,200	500,722	2,217,469	Utah.....	1914	61	2,502,200	500,722	2,217,469
	1909	274	14,185,775	2,965,687	17,005,538		1909	56	2,255,091	458,498	2,359,911		1909	56	2,255,091	458,498	2,359,911
Kentucky.....	1914	286	12,956,108	2,696,843	13,708,173	Georgia.....	1914	17	1,576,623	240,675	2,104,720	Georgia.....	1914	17	1,576,623	240,675	2,104,720
	1909	303	13,454,022	2,808,618	15,778,600		1909	27	1,891,099	410,120	2,603,384		1909	27	1,891,099	410,120	2,603,384
Wisconsin.....	1914	96	13,675,817	3,030,863	13,681,829	Arkansas.....	1914	41	1,360,845	283,878	1,468,050	Arkansas.....	1914	41	1,360,845	283,878	1,468,050
	1909	149	16,096,485	3,468,815	17,746,544		1909	38	1,095,820	231,444	1,260,509		1909	38	1,095,820	231,444	1,260,509
Nebraska.....	1914	168	11,368,083	2,375,810	10,906,829	New Jersey.....	1914	36	789,174	158,604	873,821	New Jersey.....	1914	36	789,174	158,604	873,821
	1909	189	10,712,479	2,264,861	11,431,605		1909	58	1,296,188	261,421	1,444,109		1909	58	1,296,188	261,421	1,444,109
Virginia.....	1914	299	9,923,462	2,099,328	10,346,819	All other states.....	1914	88	3,212,335	578,233	3,206,114	All other states.....	1914	88	3,212,335	578,233	3,206,114
	1909	245	8,880,618	1,842,774	9,936,242		1909	99	3,168,574	650,981	3,752,628		1909	99	3,168,574	650,981	3,752,628

Although there was a decrease of 566 in the number of mills producing 1,000 barrels or more of wheat flour in 1914, as against 1909, the output of this class of

mills increased 10,591,944 barrels, or 10.1 per cent. Minnesota reported 23.4 per cent of the total number of barrels produced by the mills of this size.

Output of flour mills producing 100,000 barrels or more of wheat flour in 1914.—Table 19 shows, by states, the number of mills producing 100,000 barrels or more of wheat flour, the quantity of wheat used, and the quantity and value of the flour manufactured.

The 218 mills reporting 100,000 barrels or more of wheat flour in 1914, consumed 329,209,225 bushels of wheat, or 60.3 per cent of the total used in all establishments and produced 71,808,950 barrels of wheat flour, or 61.7 per cent of the total. The value of the output of this class of establishments was \$324,104,688, or 59.6 per cent of the total for the United States. The average output per mill was 353,789 barrels.

There were no mills of this size reported at either census for Arkansas, Idaho, New Jersey, North Carolina, Utah, or West Virginia. Kansas leads all the other states in the number of such mills, having 45 with an average yearly output of 198,564 barrels; Minnesota is second, with 34 mills but with a much greater average production, 728,314 barrels. Missouri and New York each have 13 mills in this class, though the average output of New York is the larger.

Table 19

ESTABLISHMENTS PRODUCING 100,000 BARRELS OR MORE OF WHEAT FLOUR: 1914.

STATE.	Number of establishments.	Average production per establishment (barrels).	Wheat used (bushels).	Flour produced (barrels).	Value.
United States.....	218	353,789	329,209,225	71,808,950	\$324,104,688
California.....	5	234,878	6,109,911	1,174,388	7,047,789
Colorado.....	4	147,690	2,677,254	590,759	2,241,705
Illinois.....	12	316,090	17,382,299	3,793,084	17,908,037
Indiana.....	7	264,807	8,366,648	1,853,652	8,544,500
Iowa.....	4	172,924	3,265,719	691,697	3,175,850
Kansas.....	45	198,564	42,187,343	8,935,395	39,235,496
Michigan.....	5	241,316	5,529,015	1,206,581	6,635,901
Minnesota.....	34	728,314	112,835,961	24,762,693	106,536,569
Missouri.....	13	184,150	10,953,696	2,393,945	10,949,396
Nebraska.....	3	256,178	3,549,577	768,528	3,350,362
New York.....	13	547,905	31,499,788	7,122,767	33,188,685
North Dakota.....	7	200,846	6,749,796	1,405,922	6,324,696
Ohio.....	11	240,475	12,443,402	2,645,228	12,333,911
Oklahoma.....	7	156,619	4,966,800	1,096,332	5,067,558
Oregon.....	3	357,644	4,884,608	1,072,331	4,354,714
Pennsylvania.....	4	287,120	5,277,488	1,143,481	5,680,077
Tennessee.....	5	295,987	6,683,246	1,479,937	7,063,074
Texas.....	11	200,454	10,300,076	2,204,994	11,508,637
Virginia.....	4	160,334	2,908,872	641,338	2,939,523
Washington.....	8	303,323	10,932,955	2,426,583	10,049,419
Wisconsin.....	4	540,715	9,422,339	2,162,859	9,324,211
All other states.....	9	247,873	10,277,434	2,230,856	10,866,478

DETAIL STATE TABLES.

The principal data secured by the census inquiry concerning flour mills and gristmills, other than those relating to quantity and value of specific materials and products, are presented, by states, in Tables 20 and 21.

Table 20 shows, for 1914, 1909, and 1904, the number of establishments, average number of wage earners, primary horsepower, wages, cost of materials, and value of products. Table 21 gives more detailed statistics for merchant mills for 1914.

TABLE 20.—COMPARATIVE SUMMARY FOR THE FLOUR-MILL AND GRISTMILL INDUSTRY, BY STATES, FOR 1914, 1909, AND 1904.

STATE.	Census year.	Number of establishments.	Wage earners (average number).	Primary horsepower.	Wages.	Cost of materials.	Value of products.
Expressed in thousands.							
United States.....	1914	10,788	39,718	822,384	\$24,593	\$752,270	\$877,680
	1909	11,691	39,453	853,594	21,464	767,576	883,584
	1904	10,061	39,110	775,318	19,822	619,971	713,033
Alabama.....	1914	73	125	2,914	48	1,918	2,179
	1909	72	168	3,559	57	2,405	2,779
	1904	40	159	2,124	54	1,556	1,750
Arizona.....	1914	8	38	536	34	850	1,065
	1909	10	54	784	42	1,129	1,317
	1904	9	36	465	24	641	743
Arkansas.....	1914	102	282	5,880	123	5,172	5,802
	1909	113	312	5,945	122	4,859	5,615
	1904	91	263	4,430	104	3,157	3,702
California.....	1914	132	1,067	13,374	812	19,504	24,079
	1909	125	948	11,545	732	21,892	25,188
	1904	122	889	11,004	660	17,132	20,203
Colorado.....	1914	83	393	6,746	318	6,436	7,536
	1909	77	282	6,810	220	6,672	7,868
	1904	52	244	5,927	203	4,797	5,783
Connecticut.....	1914	85	113	2,971	59	1,631	1,881
	1909	98	145	3,616	72	1,731	2,024
	1904	86	167	3,108	86	1,691	1,982
Delaware.....	1914	60	127	3,287	59	1,203	1,433
	1909	65	139	3,349	57	1,500	1,752
	1904	47	137	2,827	58	1,315	1,537
District of Columbia.....	1914	3	5	190	3	72	78
	1909	7	8	556	16	432	506
	1904	7	61	462	30	568	660
Florida.....	1914	13	22	382			
	1909	6	11	141			
	1904	7	13	167			
Georgia.....	1914	128	367	8,672	144	5,254	6,084
	1909	105	386	9,052	144	6,728	8,000
	1904	114	464	8,341	146	7,265	8,179
Idaho.....	1914	71	188	3,914	155	2,727	3,396
	1909	57	125	3,595	91	2,025	2,480
	1904	28	84	1,963	67	1,315	1,584
Illinois.....	1914	406	2,398	35,793	1,456	42,841	49,493
	1909	461	2,464	38,472	1,271	45,590	51,111
	1904	363	2,410	38,158	1,211	34,930	39,892
Indiana.....	1914	512	2,281	41,350	1,289	32,241	37,488
	1909	563	2,298	38,502	1,216	35,002	40,541
	1904	566	2,289	42,160	1,091	31,342	36,474
Iowa.....	1914	227	790	16,388	486	11,768	14,337
	1909	277	647	18,832	382	10,934	12,871
	1904	276	770	20,049	399	10,317	12,099
Kansas.....	1914	360	2,357	46,015	1,680	64,242	72,895
	1909	501	2,360	46,218	1,448	60,439	68,476
	1904	354	1,831	34,655	1,024	36,895	42,034
Kentucky.....	1914	442	1,447	25,151	658	17,419	21,229
	1909	440	1,401	24,773	591	18,664	22,365
	1904	388	1,373	23,256	515	15,099	18,063
Louisiana.....	1914	7	31	313	14	624	687
	1909	11	82	895	33	840	942
	1904	3	4	140	2	53	66

FLOUR-MILL AND GRISTMILL PRODUCTS.

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TABLE 20.—COMPARATIVE SUMMARY FOR THE FLOUR-MILL AND GRISTMILL INDUSTRY, BY STATES, FOR 1914, 1909, AND 1904—Continued.

STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earners (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.	STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earners (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.
					Expressed in thousands.								Expressed in thousands.		
Maine.....	1914	148	217	6,025	\$128	\$3,959	\$4,426	Ohio.....	1914	649	2,363	53,524	\$1,506	\$38,957	\$45,171
	1909	173	225	7,720	101	4,027	4,507		1909	673	2,585	52,250	1,415	41,353	48,093
	1904	161	234	6,603	108	3,442	3,933		1904	694	2,700	53,880	1,340	35,626	40,856
Maryland.....	1914	247	473	11,398	241	6,919	8,164	Oklahoma.....	1914	253	700	14,050	420	14,367	16,689
	1909	295	506	13,807	227	8,003	9,268		1909	295	842	16,400	473	16,493	19,144
	1904	202	550	10,663	212	6,210	7,318		1904	108	617	9,013	331	10,187	12,019
Massachusetts.....	1914	105	176	4,900	101	3,424	3,811	Oregon.....	1914	95	450	8,565	330	9,827	11,193
	1909	120	229	5,642	128	4,131	4,632		1909	114	394	11,541	278	7,667	8,891
	1904	142	277	9,363	154	4,113	4,618		1904	105	395	9,993	271	7,352	8,468
Michigan.....	1914	427	1,370	35,321	859	23,299	27,381	Pennsylvania.....	1914	1,265	2,595	61,790	1,424	37,097	43,626
	1909	520	1,530	38,991	806	29,359	34,861		1909	1,450	2,432	69,212	1,188	38,170	44,783
	1904	405	1,508	34,755	767	23,414	26,512		1904	1,195	2,632	61,538	1,247	33,205	38,519
Minnesota.....	1914	286	4,564	100,638	3,407	127,315	148,244	Rhode Island.....	1914	20	74	1,062	29	690	798
	1909	322	4,345	93,849	2,782	124,217	139,136		1909	18	39	1,046	22	790	886
	1904	363	4,481	86,093	2,651	109,061	122,059		1904	22	45	1,310	24	1,069	1,134
Mississippi.....	1914	17	48	783	14	344	410	South Carolina.....	1914	37	30	1,046	12	346	421
	1909	13	18	609	5	131	153		1909	10	23	406	7	308	351
	1904	9	20	422	7	95	110		1904	29	60	1,440	18	633	725
Missouri.....	1914	641	2,096	39,003	1,122	33,262	38,686	South Dakota.....	1914	72	255	6,412	184	4,722	5,557
	1909	680	2,198	43,176	1,040	38,826	44,508		1909	95	285	7,364	187	5,326	6,208
	1904	582	2,345	40,262	1,091	32,928	38,026		1904	96	347	6,777	203	5,358	6,519
Montana.....	1914	33	256	4,078	209	3,902	4,890	Tennessee.....	1914	512	1,497	28,246	642	22,072	26,414
	1909	12	105	2,313	105	1,693	2,175		1909	454	1,577	27,176	559	25,286	29,079
	1904	12	67	1,455	57	1,592	2,003		1904	387	1,595	23,441	591	21,912	25,351
Nebraska.....	1914	211	682	17,830	514	12,983	15,022	Texas.....	1914	191	1,300	19,968	798	29,573	35,119
	1909	249	839	19,907	519	15,217	17,836		1909	238	1,216	20,765	669	28,657	32,485
	1904	234	863	17,951	468	10,153	12,190		1904	154	986	16,249	528	18,963	22,083
Nevada.....	1914	7	28	465	21	277	387	Utah.....	1914	70	198	3,519	144	2,637	3,156
	1909	8	24	395	24	496	598		1909	60	184	3,312	131	2,511	3,131
	1904	9	17	361	16	432	521		1904	63	150	3,047	91	2,043	2,426
New Hampshire.....	1914	79	144	4,597	89	2,422	2,734	Vermont.....	1914	125	179	7,355	105	3,659	4,143
	1909	105	116	5,502	62	2,809	3,187		1909	133	156	8,714	76	3,528	4,133
	1904	72	128	4,523	63	2,348	2,542		1904	109	185	7,043	92	2,873	3,296
New Jersey.....	1914	196	341	8,870	188	3,590	4,320	Virginia.....	1914	533	1,082	23,086	463	15,390	18,064
	1909	238	453	10,763	225	4,561	5,538		1909	458	1,014	21,454	399	15,164	17,598
	1904	182	454	9,612	211	4,522	5,469		1904	365	957	16,082	349	12,171	13,832
New Mexico.....	1914	17	29	761	16	337	425	Washington.....	1914	100	928	13,401	744	20,272	23,665
	1909	16	28	532	17	354	462		1909	96	644	11,773	464	15,474	17,893
	1904	13	29	399	14	312	388		1904	76	613	8,516	410	12,771	14,664
New York.....	1914	891	3,070	72,269	1,997	67,423	77,409	West Virginia.....	1914	229	381	9,996	218	5,928	7,053
	1909	983	2,990	79,098	1,669	60,470	69,802		1909	207	452	9,950	210	6,691	7,696
	1904	825	3,063	68,021	1,553	47,373	54,546		1904	194	400	8,339	183	5,213	6,200
North Carolina.....	1914	293	588	14,227	231	7,644	8,964	Wisconsin.....	1914	252	1,116	26,350	737	24,980	28,697
	1909	249	496	11,578	180	7,287	8,501		1909	322	1,184	31,903	695	27,638	31,667
	1904	234	519	10,359	160	5,986	6,864		1904	389	1,351	42,211	720	24,756	28,352
North Dakota.....	1914	59	424	7,810	330	10,072	12,030	Wyoming.....	1914	16	33	1,163	27	555	722
	1909	84	435	8,907	283	10,055	11,685		1909	13	29	885	21	583	746
	1904	56	312	5,770	200	5,463	6,463		1904	11	16	591	12	219	284

MANUFACTURES.

TABLE 21.—DETAIL STATISTICS FOR THE FLOUR-MILL.

STATE.		Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.										WAGE EARNERS, DEC. 15, OR NEAREST REPRESENTATIVE DAY.						Capital.
			Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.				Total.	16 and over.		Under 16.				
						Male.	Female.	Average number.	Number, 15th day of—		Male.		Female.	Male.	Female.				
									Maximum month.	Minimum month.									
1	United States.....	10,788	65,635	12,669	4,344	7,008	1,896	39,718	Se 41,684	My 37,921	41,736	41,123	533	80	.....	\$380,257,420		
2	Alabama.....	73	248	80	21	19	3	125	Jy 135	Oc 119	144	142	1	1	.....	795,026		
3	Arizona.....	8	67	3	11	13	2	38	Je 44	Oc 34	40	40	.....	.....	.....	553,530
4	Arkansas.....	102	494	140	27	39	6	282	Jy 299	De 269	305	304	1	.....	.....	1,788,048	
5	California.....	132	1,532	83	122	216	44	1,067	Se 1,249	Ap 957	1,130	1,009	52	9	.....	11,851,334		
6	Colorado.....	83	560	34	51	77	5	393	Se 429	Je 381	424	422	1	1	.....	4,969,231		
7	Connecticut.....	85	228	86	11	12	6	113	De 120	Ap 109	120	120	.....	.....	.....	1,214,432
8	Delaware.....	60	216	74	6	7	2	127	Oc 132	Je 123	130	130	.....	.....	.....	707,495
9	District of Columbia.....	3	11	4	1	1	.....	5	(*) 5	(*) 5	5	5	.....	.....	.....	7,440
10	Florida.....	13	43	14	2	5	.....	22	Oc 25	Je 20	24	24	.....	.....	.....	106,569
11	Georgia.....	128	617	151	38	53	8	367	Jy 394	De 352	381	380	.....	1	.....	2,317,442	
12	Idaho.....	71	314	50	33	35	8	188	No 234	Je 159	220	218	2	.....	.....	2,688,502	
13	Illinois.....	406	3,569	458	254	355	104	2,398	Au 2,490	Ja 2,297	2,530	2,513	14	3	.....	19,474,726		
14	Indiana.....	512	3,460	634	247	200	98	2,281	Jy 2,362	My 2,160	2,404	2,366	33	5	.....	15,493,147		
15	Iowa.....	227	1,294	268	78	116	42	790	No 860	My 732	839	757	82	.....	.....	6,555,460	
16	Kansas.....	360	3,715	439	274	532	113	2,357	Se 2,684	Ja 2,148	2,609	2,593	16	.....	.....	25,687,715	
17	Kentucky.....	442	2,468	609	167	219	26	1,447	Jy 1,567	Ap 1,368	1,456	1,413	38	5	.....	10,274,841		
18	Louisiana.....	7	54	9	5	8	1	31	Ap 36	Ja 21	34	33	.....	1	.....	190,123	
19	Maine.....	148	442	177	26	8	14	217	De 230	My 205	232	228	4	.....	.....	2,234,931	
20	Maryland.....	247	853	269	42	56	13	473	Oc 494	Je 448	500	496	2	2	.....	3,835,016		
21	Massachusetts.....	105	333	124	24	16	13	176	No 181	Au 171	178	178	.....	.....	.....	2,519,072
22	Michigan.....	427	2,353	515	174	194	100	1,370	Oc 1,410	Je 1,306	1,432	1,392	33	7	.....	10,049,641		
23	Minnesota.....	286	7,999	266	404	1,761	404	4,564	Fe 4,673	Jy 4,466	4,723	4,630	93	.....	.....	46,411,297	
24	Mississippi.....	17	82	20	7	6	.....	48	Ja 52	Au 43	53	51	.....	2	.....	140,232
25	Missouri.....	641	3,466	755	321	233	61	2,096	Se 2,244	My 1,966	2,192	2,172	18	2	.....	19,100,413		
26	Montana.....	33	430	14	34	109	17	256	Oc 282	Ap 237	284	278	4	2	.....	3,887,842		
27	Nebraska.....	211	1,218	249	108	145	34	682	Se 711	My 651	720	718	2	.....	.....	8,025,463	
28	Nevada.....	7	40	5	4	2	1	28	No 36	My 25	26	22	4	.....	.....	584,087	
29	New Hampshire.....	79	272	112	5	4	7	144	De 148	Ap 141	148	148	.....	.....	.....	1,427,405
30	New Jersey.....	196	623	221	26	26	9	341	De 349	My 334	350	350	.....	.....	.....	2,616,139
31	New Mexico.....	17	56	13	11	3	.....	29	Oc 48	Je 16	38	38	.....	.....	.....	230,642
32	New York.....	891	5,065	1,058	243	517	177	3,070	No 3,208	Je 2,940	3,205	3,134	66	5	.....	84,644,069		
33	North Carolina.....	293	1,121	391	77	13	.....	588	Se 592	My 581	604	603	.....	1	.....	3,576,664
34	North Dakota.....	59	699	33	62	141	39	424	Oc 486	My 375	462	462	.....	.....	.....	4,040,709
35	Ohio.....	649	3,876	858	275	259	121	2,363	Au 2,425	Je 2,299	2,403	2,382	18	3	.....	18,841,102		
36	Oklahoma.....	253	1,265	269	100	159	37	700	Se 761	My 650	772	772	.....	.....	.....	6,508,081
37	Oregon.....	95	696	80	74	75	17	450	Se 539	Ap 366	497	497	.....	.....	.....	9,075,946
38	Pennsylvania.....	1,265	4,695	1,613	180	203	104	2,595	No 2,678	Je 2,530	2,687	2,660	10	17	.....	23,352,164		
39	Rhode Island.....	20	105	17	3	6	5	74	Je 82	De 70	71	67	2	2	.....	352,260		
40	South Carolina.....	37	90	51	5	4	.....	30	Jy 83	Ap 27	35	35	.....	.....	.....	221,722
41	South Dakota.....	72	373	43	42	23	10	255	Se 281	Ap 240	264	263	1	.....	.....	2,856,335	
42	Tennessee.....	512	2,563	693	167	166	40	1,497	Au 1,626	My 1,367	1,532	1,524	6	2	.....	10,338,947		
43	Texas.....	191	1,992	173	146	349	24	1,300	Au 1,379	Ap 1,246	1,313	1,312	1	.....	.....	17,523,988	
44	Utah.....	70	281	26	36	20	1	198	Oc 217	Jy 178	210	208	.....	2	.....	2,600,288	
45	Vermont.....	125	351	154	4	9	5	179	No 183	Je 174	179	178	.....	1	.....	1,600,167	
46	Virginia.....	533	1,995	682	118	75	38	1,082	Au 1,118	My 1,036	1,126	1,123	2	1	.....	8,911,364		
47	Washington.....	100	1,355	65	109	209	44	928	Se 1,076	Jy 791	1,001	979	22	.....	.....	15,505,690	
48	West Virginia.....	229	775	282	43	59	10	381	De 426	Ja 355	429	428	1	.....	.....	3,812,498	
49	Wisconsin.....	252	1,804	294	118	207	69	1,116	De 1,216	Jy 1,045	1,243	1,234	4	5	.....	10,789,136		
50	Wyoming.....	16	57	11	8	5	.....	33	Se 38	Ja 28	32	32	.....	.....	.....	479,059

¹ Owned power only.

² Includes rented power, other than electric.

FLOUR-MILL AND GRISTMILL PRODUCTS.

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AND GRISTMILL INDUSTRY, BY STATES: 1914.

EXPENSES.								Value of products.	Value added by manu- facture.	POWER.					Electric horse- power gener- ated in estab- lish- ments report- ing.	
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.						
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and cor- poration income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. ¹	Inter- nal com- bustion en- gines. ²	Water wheels and motors. ¹	Electric (rent- ed).		
\$7,517,711	\$8,852,430	\$24,593,162	\$115,447	\$1,257,806	\$2,540,676	\$744,489,872	\$7,780,149	\$877,679,709	\$125,409,688	822,384	403,186	77,429	229,328	112,441	37,807	1
43,029	17,642	47,047	100	6,044	6,888	1,890,960	27,191	2,179,165	261,014	2,914	996	234	465	1,229		2
26,047	18,405	34,054	-----	2,328	5,996	832,784	17,207	1,064,996	215,095	536	365	3	60	108		3
34,280	31,918	123,226	-----	9,546	12,517	5,126,569	45,425	5,802,099	630,105	5,880	3,949	712	725	494	290	4
228,856	266,872	811,811	735	18,295	83,923	19,310,410	193,364	24,078,735	4,574,961	13,374	4,677	647	646	7,404	192	5
99,966	99,140	315,960	234	6,792	44,950	6,353,940	81,838	7,535,633	1,099,855	6,746	4,496	431	755	1,065		6
12,280	8,084	59,239	65	7,004	7,718	1,614,023	16,793	1,881,481	250,665	2,971	1,035	384	972	590		7
8,550	6,376	59,349	-----	8,525	2,667	1,187,178	15,422	1,483,410	280,810	2,287	850	445	1,929	63	5	8
150	100	2,682	-----	600	25	70,585	1,018	78,048	6,445	190	145	-----	-----	45	-----	9
3,000	4,920	6,886	-----	150	1,583	128,982	5,049	166,237	32,206	382	180	92	-----	119	-----	10
60,860	62,159	144,382	-----	4,408	26,224	5,206,834	47,346	6,083,760	829,580	8,672	2,650	515	4,212	1,295	45	11
51,068	44,363	154,742	-----	3,622	24,363	2,672,624	54,408	3,395,942	668,910	3,914	190	83	1,254	2,387		12
519,045	462,812	1,456,410	3,138	44,934	120,943	42,489,475	351,432	49,493,224	6,652,317	35,793	30,086	1,914	750	3,043	902	13
335,944	227,081	1,288,879	12,214	14,542	119,496	31,858,486	382,180	37,488,223	5,247,557	41,350	30,081	2,136	5,073	4,055	1,793	14
151,059	206,705	485,693	1,655	15,251	44,042	11,570,090	181,046	14,336,576	2,578,840	16,388	8,451	1,264	4,806	1,867	777	15
574,959	672,712	1,680,387	7,500	20,335	204,089	63,568,966	673,206	72,894,736	8,652,564	46,015	27,315	5,090	6,226	7,371	2,797	16
203,720	227,579	658,314	3,900	8,078	76,467	17,207,568	211,886	21,229,203	3,809,749	25,151	18,112	2,613	3,156	1,270	419	17
7,950	8,026	13,855	-----	3,570	1,381	621,719	2,446	687,387	63,222	313	-----	193	-----	120	-----	18
24,207	10,144	127,733	2,338	12,648	14,488	3,922,505	36,675	4,425,824	466,644	6,025	738	789	2,491	2,607	-----	19
54,503	54,205	241,132	-----	13,410	23,089	6,842,998	75,562	8,163,869	1,245,309	11,398	5,140	1,473	4,390	295	-----	20
25,798	20,694	101,471	3,578	22,677	15,913	3,394,208	29,679	3,811,377	387,490	4,900	486	442	2,271	1,791	197	21
236,764	245,565	859,540	7,222	27,322	110,786	23,053,453	245,718	27,381,474	4,082,303	35,321	15,008	2,096	13,369	4,848	981	22
1,083,233	2,433,846	3,406,631	12,835	514,562	313,538	126,084,794	1,229,777	148,243,708	20,929,137	100,638	56,876	1,564	36,036	6,162	21,048	23
6,952	6,000	14,488	-----	2,488	1,134	339,475	4,903	410,332	66,054	783	308	135	-----	340	-----	24
455,109	292,233	1,122,193	3,162	24,705	103,880	32,826,061	436,328	38,686,309	5,423,920	39,003	29,902	3,097	2,883	3,121	441	25
59,654	152,120	209,064	-----	533	26,750	3,839,862	62,070	4,890,275	988,343	4,078	1,620	161	600	1,697	185	26
168,744	155,583	513,869	1,300	10,435	46,721	12,782,912	200,321	15,022,126	2,038,893	17,830	7,866	3,247	5,664	1,553	281	27
6,660	3,120	21,546	1,950	300	2,901	273,885	3,252	386,566	109,429	465	15	-----	390	150	25	28
5,350	4,307	89,139	-----	6,529	11,671	2,410,396	11,606	2,733,820	311,818	4,597	1,025	310	2,656	606	74	29
23,884	16,858	187,796	-----	19,374	16,579	3,555,023	34,988	4,320,424	730,413	8,870	1,730	1,372	5,334	434	4	30
8,060	1,832	15,652	500	1,680	2,344	322,972	14,114	424,501	87,415	761	570	40	16	135	-----	31
494,643	609,001	1,996,609	24,017	121,649	159,881	66,923,047	499,714	77,408,764	9,986,003	72,269	19,595	8,039	31,314	13,321	3,226	32
66,944	51,498	231,074	260	3,523	24,394	7,514,924	128,559	8,963,501	1,319,718	14,227	5,138	760	5,486	2,833	87	33
111,224	226,676	329,859	482	4,820	30,545	9,895,336	176,908	12,029,905	1,957,661	7,810	6,798	286	270	456	568	34
411,545	326,794	1,505,972	7,939	24,405	138,319	38,569,587	387,799	45,171,200	6,213,814	53,524	30,333	11,831	7,641	3,719	730	35
156,002	197,187	420,049	120	3,865	57,097	14,206,706	160,260	16,688,690	2,321,724	14,050	8,927	3,428	9,001	1,606	591	36
120,065	100,410	329,948	423	40,400	48,438	9,726,888	100,343	11,192,573	1,365,342	8,565	534	212	3,453	4,366		37
276,723	195,473	1,424,085	2,873	100,819	113,277	36,781,338	315,544	43,626,356	6,529,474	61,780	20,489	9,147	26,446	5,708	519	38
2,700	9,939	28,737	60	1,093	1,420	683,739	6,335	797,553	107,479	1,062	260	25	624	183	66	39
6,456	2,688	11,631	-----	715	883	340,344	5,842	420,629	74,443	6,412	3,970	1,018	565	859	23	41
53,110	36,728	183,607	-----	4,213	16,946	4,610,760	110,931	5,556,996	835,305	-----	-----	-----	-----	-----	-----	42
229,405	206,141	642,485	4,733	11,273	62,592	21,846,248	225,473	26,413,574	4,341,853	28,246	16,746	930	7,697	2,873	148	43
313,947	420,104	797,932	5,440	9,956	94,454	29,282,957	310,230	35,110,301	5,537,114	19,968	12,777	3,296	1,325	2,570	386	44
33,920	18,927	143,942	-----	1,300	16,233	2,605,507	31,810	3,155,513	518,196	3,519	155	113	2,065	1,216	-----	45
2,248	5,203	105,051	500	6,187	14,826	3,646,025	13,025	4,142,854	483,804	7,355	278	494	5,742	841	242	46
141,247	81,380	463,025	-----	25,967	45,326	15,273,312	116,198	18,084,413	2,694,903	23,086	4,491	2,020	14,018	2,557	193	47
283,001	267,938	743,620	697	31,725	119,644	20,070,584	201,911	23,665,382	3,392,887	13,401	1,917	221	2,197	9,066	35	48
51,842	43,525	217,891	675	8,367	24,333	5,876,821	51,607	7,052,814	1,124,286	9,996	4,793	2,490	1,970	743	116	49
229,028	286,362	736,575	4,802	25,830	93,061	24,741,972	237,929	28,997,413	3,717,512	26,350	10,386	1,460	10,774	3,790	633	50
14,010	5,055	27,300	-----	1,012	5,432	547,440	7,281	721,818	167,097	1,163	585	93	345	140	-----	51

* Same number reported for one or more other months.

* Same number reported throughout the year.

MANUFACTURES.

Classification of products, by establishments and states.—In order to show separately the statistics for establishments manufacturing chiefly for human consumption and those producing chiefly feed for

live stock, a separate tabulation was made for the two classes. The principal statistics for such mills are presented in Table 22 for the years 1914 and 1909.

Table 22	1914		1909			1914		1909	
	Manufacturing chiefly for human consumption.	Manufacturing chiefly feed for live stock.	Manufacturing chiefly for human consumption.	Manufacturing chiefly feed for live stock.		Manufacturing chiefly for human consumption.	Manufacturing chiefly feed for live stock.	Manufacturing chiefly for human consumption.	Manufacturing chiefly feed for live stock.
Number of establishments.....	7,848	2,940	9,162	2,529	Paid for contract work.....	\$102,436	\$13,011	(?)	(?)
Persons engaged in the industry.....	56,390	9,245	59,188	6,866	Rent and taxes.....	\$3,329,663	\$468,819	(?)	(?)
Proprietors and firm members.....	9,168	3,501	11,365	3,205	Cost of materials.....	\$688,204,150	\$84,065,871	\$724,294,494	\$43,281,985
Salaried employees.....	12,119	1,129	11,378	653	Value of products.....	\$802,878,846	\$74,800,863	\$832,790,364	\$50,794,041
Wage earners (average number).....	35,103	4,615	36,445	3,008	Value added by manufacture (value of products less cost of materials).....	\$114,674,696	\$10,734,992	\$108,495,870	\$7,512,056
Primary horsepower.....	822,384	(1)	853,584	(1)	Grain ground, bushels.....	724,683,462	94,245,859	736,013,881	70,234,080
Capital.....	\$343,001,356	\$37,256,064	\$326,654,430	\$22,497,349					
Salaries and wages.....	\$37,517,198	\$3,446,105	\$32,062,511	\$1,918,642					
Salaries.....	\$15,371,536	\$993,605	\$12,021,101	\$495,606					
Wages.....	\$22,145,662	\$2,447,500	\$20,041,350	\$1,423,036					

¹ Included with horsepower of mills manufacturing for human consumption. ² Figures not available. ³ Includes wheat, corn, rye, buckwheat, barley, and oats.

Table 23 shows for 1914, by states, the number of establishments, the quantity and kind of grain ground, and the quantity and value of the products

of the mills engaged primarily in the production of feed for live stock.

Table 23	STATE.	Number of establishments.	GRAIN, GROUND (BUSHELS).			PRODUCTS.				
			Corn.	Oats.	Other grain.	Total value.	Feed.		All other products (value).	
							Quantity. (tons).	Value.		
United States.....			2,940	53,507,330	23,050,719	17,687,860	\$74,800,863	2,287,127	\$68,309,151	\$6,491,712
Alabama.....	7	453,884	344,600	24,380	573,627	19,722	573,627	.....	99,485
Arkansas.....	11	864,376	50	61,350	804,334	22,631	704,849	84,987	84,987	
California.....	78	192,392	549,025	6,684,000	5,163,953	189,508	5,078,966	3,220	3,220	
Colorado.....	36	665,656	137,364	182,398	771,658	25,022	768,438	65,223	65,223	
Connecticut.....	43	1,197,362	197,382	20,408	1,139,888	34,321	1,074,665	901	901	
Delaware.....	4	21,804	5,000	200	22,479	670	21,578	129,875	129,875	
Georgia.....	4	327,910	25,000	69,968	482,518	12,000	352,643	8,998	8,998	
Idaho.....	23	17,773	150,621	243,508	299,351	9,775	290,353	177,824	177,824	
Illinois.....	137	2,642,780	807,621	520,601	3,995,187	131,108	3,817,363	276,315	276,315	
Indiana.....	96	894,348	349,748	297,826	1,287,031	34,911	1,010,716	206,473	206,473	
Iowa.....	113	1,193,211	687,711	338,409	1,569,177	47,065	1,356,444	122,552	122,552	
Kansas.....	174	2,892,694	111,063	251,380	2,813,410	92,053	2,690,858	21,610	21,610	
Kentucky.....	10	515,050	20,000	5,000	452,727	15,265	431,117	33,182	33,182	
Louisiana.....	5	593,944	107,500	-----	684,514	21,832	651,332	178,662	178,662	
Maine.....	51	1,572,522	509,339	19,810	1,684,692	48,361	1,506,000	21,009	21,009	
Maryland.....	34	216,823	36,825	43,915	243,725	7,495	222,716	74,603	74,603	
Massachusetts.....	37	1,334,972	151,817	19,438	1,225,967	37,850	1,151,364	451,532	451,532	
Michigan.....	137	1,472,927	1,429,572	816,993	3,069,880	88,232	2,618,348	200,655	200,655	
Minnesota.....	64	1,285,483	1,823,344	759,889	2,659,995	95,072	2,459,340	46,400	46,400	
Mississippi.....	4	157,000	40,000	18,000	268,200	7,850	220,800	143,145	143,145	
Missouri.....	139	3,560,751	89,521	177,155	3,412,888	122,958	3,269,743	6,850	6,850	
Montana.....	5	380	46,409	30,082	53,577	1,742	46,727	46,288	46,288	
Nebraska.....	29	371,566	52,615	140,025	400,381	13,770	354,093	41,098	41,098	
New Hampshire.....	54	1,085,116	372,176	70,582	1,192,020	37,511	1,150,322	145,964	145,964	
New Jersey.....	116	1,539,940	239,157	285,636	1,839,030	53,116	1,693,066	1,387,821	1,387,821	
New York.....	431	9,941,434	6,665,275	1,689,388	13,699,124	390,052	12,281,303	195,651	195,651	
North Carolina.....	4	419,795	2,500	12,500	436,893	7,166	241,242	6,805	6,805	
North Dakota.....	5	25,400	68,772	31,289	72,107	2,446	65,302	189,510	189,510	
Ohio.....	107	1,849,487	851,160	547,862	2,598,304	66,407	2,408,794	304,488	304,488	
Oklahoma.....	159	2,598,185	100,040	201,219	2,314,245	72,123	2,009,757	12,715	12,715	
Oregon.....	17	3,271	889,191	298,361	422,849	13,369	410,134	559,801	559,801	
Pennsylvania.....	394	5,179,760	1,991,091	960,337	6,619,876	191,502	6,060,075	10,718	10,718	
Rhode Island.....	12	833,258	70,947	800	707,125	23,324	696,407	286	286	
South Dakota.....	8	41,796	39,536	29,259	76,201	2,464	75,915	19,161	19,161	
Tennessee.....	14	412,267	33,600	125,100	693,618	21,292	674,457	268,858	268,858	
Texas.....	55	1,912,606	334,475	181,545	2,467,587	69,871	2,198,729	170,040	170,040	
Vermont.....	83	1,928,223	826,725	123,251	2,400,249	69,770	2,230,209	26,888	26,888	
Virginia.....	15	173,000	17,700	17,900	199,448	5,092	182,560	49,335	49,335	
Washington.....	40	279,992	646,558	914,235	1,279,461	40,789	1,230,126	155,442	155,442	
West Virginia.....	52	1,017,703	243,155	49,852	1,086,337	29,735	880,895	545,192	545,192	
Wisconsin.....	122	1,716,468	2,453,514	1,383,859	3,571,229	107,462	3,026,037	2,550	2,550	
All other states.....	11	103,025	26,820	40,150	144,291	4,423	141,741			

GLUCOSE AND STARCH INDUSTRY.

By JAMES D. BOYLE.

SUMMARY AND ANALYSIS.

Scope of the report.—This report presents statistics for the manufacture of glucose and starch. Since some of the establishments reported the manufacture of both products, separate statistics for each have no great significance. In all tables, therefore, with the exception of Tables 2, 3, 4, and 15, only combined figures for the two classes of establishments are presented. In view of the fact that the few states for which statistics might be shown separately without disclosing the operations of individual establishments, together reported only about 10 per cent of the total for the United States, only figures relating to the United States as a whole are presented.

Comparative summary: 1914, 1909, and 1904.—Table 1 summarizes the statistics for the glucose and starch industry as a whole for 1914, 1909, and 1904, and gives percentages of increase.

The figures given for cost of materials and value of products include a small amount of duplication, due to the fact that a few establishments engaged in "re-processing" and mixing starches use as materials the products of other establishments in the industry.

The progress of the industry during the decade ending with 1914 is represented by an increase of 61.2 per cent in the value of the production, 74 per cent in the value added by manufacture, and 10.1 per cent in the number of persons engaged in the industry. The decline from census to census in the number of factories in operation is due in part to the discontinuance of small plants formerly engaged in the manufacture of potato starch. The tendency of manufacturing to become concentrated in large establishments has also resulted in some of the small plants being absorbed by the larger ones.

Table 1

	GLUCOSE AND STARCH INDUSTRY.				
	Number or amount.			Per cent of increase. ¹	
	1914	1909	1904	1909-1914	1904-1909
Number of establishments.....	89	118	140	-24.6	-15.7
Persons engaged.....	5,957	5,827	5,409	2.2	7.7
Proprietors and firm members.....	70	86	111	-22.5	-22.5
Salaries and wages.....	1,378	968	619	42.4	56.4
Wage earners (average number).....	4,509	4,773	4,679	-5.5	2.0
Primary horsepower.....	41,639	28,257	35,988	47.4	-21.5
Capital.....	\$43,642,343	\$38,866,419	\$24,053,008	12.3	61.6
Salaries and wages.....	5,489,697	4,079,722	3,295,711	34.6	23.8
Salaries.....	1,940,132	1,413,209	654,652	37.3	115.9
Wages.....	3,549,565	2,666,513	2,641,059	33.1	1.0
Paid for contract work.....	16,394	3,820	(?)	232.2	.....
Rent and taxes.....	217,529	369,628	113,089	-41.1	226.8
Cost of materials.....	40,207,592	36,898,771	25,518,876	9.0	44.6
Value of products.....	52,615,401	48,799,311	32,649,836	7.5	49.5
Value added by manufacture (value of products less cost of materials).....	12,407,809	11,900,540	7,130,960	4.3	66.9

¹ A minus sign (—) denotes decrease; percentages are omitted where base is less than 100.

² Not reported separately.

While the period of greatest development was from 1904 to 1909, the succeeding five years show an increase in the more important items given in the table. The decrease of 5.5 per cent in the average number of wage earners is due to some extent to improved methods in operation, fewer employees being needed to produce a given result. The reduction in number of proprietors and firm members is explained in the analysis of Tables 5 and 6.

Table 2 presents a summary of the statistics for each of the two classes of establishments—(1) those engaged primarily in the manufacture of glucose and (2) those engaged primarily in the manufacture of starch—as reported at the censuses of 1914, 1909, and 1904, together with percentages of increase.

Table 2

	ESTABLISHMENTS ENGAGED PRIMARILY IN MANUFACTURING—						PER CENT OF INCREASE. ¹			
	1914		1909		1904		1909-1914		1904-1909	
	Glucose.	Starch.	Glucose.	Starch.	Glucose.	Starch.	Glucose.	Starch.	Glucose.	Starch.
Number of establishments.....	67	82	8	110	9	131	.....	-25.4	.....	-16.0
Persons engaged.....	3,647	2,310	3,454	2,373	3,247	2,162	5.6	-2.2	6.4	9.8
Proprietors and firm members.....	918	460	600	368	371	248	53.0	25.0	61.7	48.4
Salaries and wages.....	2,729	1,780	2,848	1,925	2,876	1,803	-4.2	-7.5	-1.0	6.8
Wage earners (average number).....	24,590	17,049	16,923	11,334	(?)	(?)	45.3	50.4	.....	.....
Primary horsepower.....	\$26,572,403	\$17,069,940	\$21,446,328	\$17,420,091	\$17,045,313	\$7,007,695	23.9	-2.0	25.8	148.6
Capital.....	3,638,197	1,851,500	2,594,912	1,484,810	2,162,837	1,132,574	40.2	24.7	30.0	31.1
Salaries and wages.....	1,311,217	628,915	957,588	455,651	388,257	266,395	36.9	38.0	146.6	71.0
Salaries.....	2,326,980	1,222,585	1,637,324	1,029,159	1,774,580	866,479	42.1	18.8	-7.7	18.8
Wages.....	14,522	1,872	.....	3,820	(?)	(?)	.....	.....	.....	.....
Paid for contract work.....	119,997	97,532	232,385	137,243	77,138	35,951	-48.4	-28.9	201.3	281.8
Rent and taxes (including internal revenue).....	29,909,655	10,297,937	25,271,792	11,626,979	20,258,022	5,280,854	18.4	-11.4	24.7	121.0
Cost of materials.....	38,619,383	13,996,018	32,930,918	15,868,393	24,566,932	8,082,904	17.3	-11.8	34.0	96.3
Value of products.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Value added by manufacture (value of products less cost of materials).....	8,709,728	3,698,081	7,659,126	4,241,414	4,308,910	2,822,050	13.7	-12.8	77.8	50.3

¹ A minus sign (—) denotes decrease; percentages are omitted where base is less than 100.

² Figures not available.

³ Not reported separately.

Although the establishments engaged primarily in the manufacture of starch represented 93.6 per cent of the total number in 1904, 93.2 per cent in 1909, and 92.1 per cent in 1914, the values of their products formed only 24.8 per cent, 32.5 per cent, and 26.6 per cent of the totals for the three years, respectively, and the average number of wage earners employed by them constituted 39.5 per cent, 40.3 per cent, and 38.5 per cent, of the respective totals.

Table 3 presents statistics for the glucose branch of the industry from 1879 to 1914, inclusive, and table 4 for the starch branch, from 1849.

Table 3 GLUCOSE AND STARCH INDUSTRY—GLUCOSE BRANCH.

	Number of establishments.	Wage earners (average number).	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	7	2,729	\$2,326,980	\$29,909,655	\$35,619,383	\$8,709,728
1909.....	8	2,845	1,637,324	25,271,792	32,930,918	7,659,126
1904.....	9	2,876	1,774,580	20,258,022	24,566,932	4,308,910
1899.....	8	3,288	1,755,179	15,773,233	21,693,656	5,920,423
1889.....	7	1,724	902,086	5,020,131	7,756,686	2,727,555
1879.....	7	1,192	605,802	3,044,450	4,551,212	1,506,762

Table 4 GLUCOSE AND STARCH INDUSTRY—STARCH BRANCH.

	Number of establishments.	Wage earners (average number).	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	82	1,780	\$1,222,585	\$10,297,937	\$13,996,018	\$3,698,081
1909.....	110	1,925	1,029,159	11,626,979	15,868,393	4,241,414
1904.....	131	1,803	886,479	5,260,854	8,082,904	2,822,050
1899.....	124	2,655	1,099,696	5,806,422	9,232,984	3,426,562
1889.....	80	2,903	959,108	5,153,677	8,934,517	3,780,840
1879.....	139	3,119	919,197	4,911,060	7,477,742	2,566,682
1869.....	195	2,072	900,719	3,884,909	5,994,422	2,109,513
1859.....	167	1,073	298,526	1,340,000	2,823,258	1,443,258
1849.....	146	694	193,224	799,459	1,261,468	462,009

Persons engaged in the industry.—Table 5 shows for 1914 and 1909 the number of persons engaged in the industry, distributed by sex, the average number of wage earners being distributed also by age. The sex and age classification of the average number of

wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

Table 6 gives for the several classes of persons engaged in the industry percentages of increase from 1909 to 1914, and the per cent distribution at the two censuses.

CLASS.	Census year.	PERSONS ENGAGED IN THE INDUSTRY.		
		Total.	Male.	Female.
All classes.....	1914 1909	5,957 5,827	5,386 5,319	571 508
Proprietors and officials.....	1914 1909	240 227	235 225	4 2
Proprietors and firm members.....	1914 1909	70 86	68 84	2 2
Salaried officers of corporations.....	1914 1909	54 49	53 49	1
Superintendents and managers.....	1914 1909	116 92	115 92	1
Clerks and other subordinate salaried employees.	1914 1909	1,208 827	1,003 700	202 127
Wage earners (average number).....	1914 1909	4,509 4,773	4,144 4,394	365 379
16 years of age and over.....	1914 1909	4,506 4,764	4,142 4,389	364 375
Under 16 years of age.....	1914 1909	3 9	2 5	1 4

The total number of persons engaged in the glucose and starch industry increased by only 2.2 per cent between 1909 and 1914, and the number of proprietors and firm members and the average number of wage earners decreased. The only class to show any considerable growth was that of clerks and other subordinate salaried employees. The reduction in number of proprietors and firm members is accounted for by the fact that during the period covered a number of small starch factories went out of business, but the number of salaried officers of corporations increased despite the decrease in the number of establishments under corporate ownership. (See Table 10.)

Table 6

CLASS.	PERSONS ENGAGED IN THE INDUSTRY.							
	Per cent of increase, ¹ 1909-1914.			Per cent distribution.				
	Total.	Male.	Female.	Total.		Male.		Female.
				1914	1909	1914	1909	1914
All classes.....	2.2	1.3	10.4	100.0	100.0	100.0	100.0	100.0
Proprietors and officials.....	5.7	4.9	100.0	4.0	3.9	4.4	4.2	0.4
Proprietors and firm members.....	.....	.....	.....	1.2	1.5	1.3	1.6	0.4
Salaried officers of corporations.....	.....	.....	.....	0.9	0.8	1.0	0.9	0.2
Superintendents and managers.....	.....	.....	.....	1.9	1.6	2.1	1.7	0.2
Clerks and other subordinate salaried employees.....	46.1	43.7	59.1	20.3	14.2	18.7	13.2	35.4
Wage earners (average number).....	-5.5	-5.7	-3.7	75.7	81.9	78.9	82.6	63.9
16 years of age and over.....	-5.4	-5.6	-2.9	75.6	81.7	78.9	82.5	63.7
Under 16 years of age.....	.....	.....	.....	0.1	0.2	(?)	0.1	0.8

¹A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.

² Less than one-tenth of 1 per cent.

In 1914, 5,386, or 90.4 per cent, of the total number of persons engaged in the industry were males and 571, or 9.6 per cent, females. The males predominated in all of the classes for which separate figures

are shown. In the number of proprietors and officials they constituted 98.3 per cent, in clerks and other subordinate employees 83.3 per cent, and in wage earners 91.9 per cent. There was little difference in

the proportion of males and females employed in 1909 as compared with 1914.

In order to compare the distribution of persons engaged in the industry in 1914 with that made at the census of 1904, it is necessary to use the classification employed at the earlier inquiry. (See Explanation of terms.) Table 7 presents a comparison based on such a classification for the years 1914, 1909, and 1904, with percentages of increase and per cent distribution.

Table 7

CLASS.	PERSONS ENGAGED IN THE INDUSTRY.							
	Number.			Per cent distribution.			Per cent of increase. ¹	
	1914	1909	1904	1914	1909	1904	1909-1914	1904-1909
	1914	1909	1904	1914	1909	1904	1909-1914	1904-1909
Total.....	5,957	5,827	5,409	100.0	100.0	100.0	2.2	7.7
Proprietors and firm members.....	70	86	111	1.2	1.5	2.1	.....	-22.5
Salaried employees.....	1,378	968	619	23.1	16.6	11.4	42.4	58.4
Wage earners.....	4,509	4,773	4,679	75.7	81.9	86.5	-5.5	2.0

A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.

Wage earners employed, by months.—The following table gives for the industry the total number of wage earners employed on the 15th of each month, or the nearest representative day, for 1914 and 1909, and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

Table 8

MONTH.	WAGE EARNERS IN THE INDUSTRY.					
	Number. ¹			Per cent of maximum.		
	1914	1909	1904	1914	1909	1904
January.....	4,850	4,731	4,697	98.0	84.9	80.8
February.....	4,932	4,827	5,038	99.7	86.7	86.6
March.....	4,948	4,954	5,061	100.0	89.0	87.0
April.....	4,608	4,624	4,588	93.1	83.0	78.9
May.....	4,182	4,578	4,417	84.5	82.2	76.0
June.....	4,405	4,588	3,981	89.0	82.3	68.5
July.....	4,157	4,245	3,987	84.0	76.2	68.6
August.....	4,403	4,198	4,034	89.0	75.4	69.4
September.....	4,627	4,812	5,114	93.5	89.4	87.9
October.....	4,377	5,569	5,815	88.5	100.0	100.0
November.....	4,139	5,398	4,962	83.6	96.9	85.3
December.....	4,480	4,771	4,454	90.5	85.7	76.6

¹ The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

The employment has become more stable as the industry has developed. In 1914 the minimum number of wage earners represented 83.6 per cent of the maximum, the corresponding percentages for 1909 and 1904 being 75.4 and 68.5, respectively. In 1914 the maximum employment was in March, but in 1909 and 1904 was in October. The minimum figures for the three years were reported for November, August, and June, respectively.

Prevailing hours of labor.—In Table 9 the average number of wage earners reported for 1914 and 1909

has been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. The number employed in each establishment has been classified as a total, even though a few employees worked a greater or a smaller number of hours.

Table 9

PREVAILING HOURS OF LABOR PER WEEK.	WAGE EARNERS IN THE INDUSTRY— BOTH BRANCHES COMBINED.			
	Average number.		Per cent of total.	
	1914	1909	1914	1909
Total.....	4,509	4,773	100.0	100.0
48 and under.....	47	70	1.0	1.5
Between 48 and 54.....	4	4	0.1	0.1
54.....	9	16	0.2	0.3
Between 54 and 60.....	16	.....	0.4	.....
60.....	2,903	1,251	64.4	26.2
Between 60 and 72.....	790	672	17.5	14.1
72.....	131	658	2.9	13.8
Over 72.....	613	2,102	13.6	44.0

The tendency in this industry has been toward a reduction of the number of hours of labor per week. In 1909, 57.8 per cent of the total number of wage earners were employed in establishments where the prevailing hours were 72 or more per week, as against 16.5 per cent in 1914. On the other hand, for the earlier year only 26.2 per cent of the total were reported by establishments operating 60 hours per week, as against 64.4 per cent for the later year. In both years the wage earners in establishments with prevailing hours below 60 per week constituted very small proportions of the totals.

Character of ownership.—Table 10 presents statistics concerning the character of ownership, or legal organization of establishments in the glucose and starch industry for 1914 and 1909.

Table 10

	1914	1909
Number of establishments, total.....	89	118
Owned by—		
Individuals.....	43	47
Corporations.....	34	55
All others.....	12	16
Per cent of total owned by—		
Individuals.....	48.3	39.8
Corporations.....	38.2	46.6
All others.....	13.5	13.6
Average number of wage earners, total.....	4,509	4,773
In establishments owned by—		
Individuals.....	99	1310
Corporations.....	4,373	4,493
All others.....	37	.....
Per cent of total in establishments owned by—		
Individuals.....	2.2	6.5
Corporations.....	97.0	93.5
All others.....	0.8	.....
Value of products, total.....	\$52,615,401	\$48,799,311
Of establishments owned by—		
Individuals.....	\$488,822	\$1,841,874
Corporations.....	\$51,882,283	\$46,957,437
All others.....	\$244,297	.....
Per cent of total of establishments owned by—		
Individuals.....	0.9	13.8
Corporations.....	98.6	96.2
All others.....	0.5	.....

¹ Includes the group "all others," to avoid disclosure of individual operations

MANUFACTURES.

Although corporations represented but 38.2 per cent of the number of establishments in 1914, they reported 97 per cent of the average number of wage earners and 98.6 per cent of the value of products. During the five years 1909-1914 establishments under corporate ownership decreased in number, both actually and proportionally; their wage earners decreased slightly in average number, but repre-

sented a somewhat greater percentage of the total in the later year than in the earlier; and the value of their products increased, by 4,924,845 and proportionally from 96.2 to 98.6.

Size of establishments.—The tendency of the industry to become concentrated in large establishments is indicated by the statistics given in the following table.

Table 11 VALUE OF PRODUCT.	NUMBER OF ESTABLISHMENTS.			AVERAGE NUMBER OF WAGE EARNERS.			VALUE OF PRODUCTS.		
	1914	1909	1904	1914	1909	1904	1914	1909	1904
Total.....	89	118	140	4,509	4,773	4,679	\$52,615,401	\$48,799,311	\$32,649,836
Less than \$5,000.....	5	21	33	4	25	(?)	16,950	60,946	98,984
\$5,000 to \$20,000.....	56	60	66	126	126	(?)	624,353	665,193	699,200
\$20,000 to \$100,000.....	11	15	19	116	85	(?)	393,231	555,487	902,237
\$100,000 to \$1,000,000.....	5	9	14	266	504	(?)	2,282,498	4,074,354	
\$1,000,000 and over.....	12	13	8	3,997	4,033	(?)	49,298,364	43,443,329	30,979,355
PER CENT DISTRIBUTION.									
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than \$5,000.....	5.6	17.8	23.6	0.1	0.5	(?)	(1)	0.1	0.3
\$5,000 to \$20,000.....	62.9	50.8	47.1	2.8	2.6	(?)	1.2	1.4	2.0
\$20,000 to \$100,000.....	12.4	12.7	13.6	2.6	1.8	(?)	0.7	1.1	2.8
\$100,000 to \$1,000,000.....	5.6	7.6	10.0	5.9	10.6	(?)	4.3	8.3	
\$1,000,000 and over.....	13.5	11.0	5.7	88.6	84.5	(?)	93.7	89.0	94.9

¹ Less than one-tenth of 1 per cent.

² Comparable figures not available.

The extent to which this industry is concentrated in large establishments is shown by the fact that although establishments with products valued at \$1,000,000 and over in 1914 represented only 13.5 per cent of the total number, they reported 88.6 per cent of the total average number of wage earners and 93.7 per cent of the total value of products. Each of these three percentages is somewhat greater than the corresponding one for the preceding census year.

The size of the establishments as measured by the average numbers of wage earners employed in 1914 and in 1909 is shown by Table 12.

Table 12 ESTABLISHMENTS EMPLOYING—	GLUCOSE AND STARCH.					
	Number of establishments.		Wage earners.			
			Average number.		Per cent distribution.	
	1914	1909	1914	1909	1914	1909
Total.....	89	118	4,509	4,773	100.0	100.0
No wage earners.....	2	1				
1 to 5 wage earners.....	65	89	147	174	3.3	3.6
6 to 20 wage earners.....	7	9	78	90	1.7	1.9
21 to 50 wage earners.....	1	3	50	112	1.1	2.3
51 to 100 wage earners.....	1	1	65	72	1.4	1.5
101 to 250 wage earners.....	7	8	1,300	1,492	28.8	31.3
251 to 500 wage earners.....	4	6	1,396	2,156	31.0	45.2
501 to 1,000 wage earners.....	2	1	1,475	677	32.7	14.2

Concentration of the industry in large establishments is further shown by the high average number of wage earners reported by such plants. The 13 establishments with more than 100 wage earners each, although representing only about one-seventh of the total number in 1914, employed 92.5 per cent of the

total wage earners in that year. The two establishments with more than 500 wage earners each employed nearly one-third of the total. The establishments with no wage earners are small factories which manufacture starch from potatoes and where the work is done by the proprietors or firm members. In some cases one or two wage earners are employed for short periods, but the number is so small and the term of employment so short that in computing the average number no wage earners could be shown.

Engines and power.—Table 13 shows, for 1914, 1909, and 1904, the number and horsepower of engines and motors employed in generating primary power (including electric motors operated by rented current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting.

The increase in primary horsepower between 1909 and 1914 amounted to 13,382, or 47.4 per cent. (See Table 1.)

Between 1904 and 1909 the number of steam engines and turbines decreased by nearly one-third, and their horsepower by about one-sixth; but during the following five-year period the decline was much less pronounced and was accompanied by a marked increase in horsepower.

The use of rented electric power has increased rapidly since 1909, when only 163 horsepower was reported, as against 2,456 horsepower for 1914.

A very large proportion of the owned power in this industry is transformed into electric current before being used. In 1909 the power of motors run by current generated by establishments reporting aggregated

27,067, but although the number of such motors combined horsepower in 1914—26,820—was slightly nearly doubled during the following five years, their less than in 1909.

Table 13

POWER.	HORSEPOWER.								
	NUMBER OF ENGINES OR MOTORS.			Amount.			Per cent distribution.		
	1914	1909	1904	1914	1909	1904	1914	1909	1904
Primary power, total.....	259	259	273	41,639	28,257	35,986	100.0	100.0	100.0
Owned.....	167	248	267	38,998	28,069	35,967	94.1	99.3	99.1
Steam engines and turbines.....	151	164	240	38,003	27,835	33,406	91.3	98.5	92.8
Internal-combustion engines.....	5	3	5	102	49	81	0.7	0.2	0.2
Water wheels, turbines, and motors.....	11	181	22	893	1,185	2,180	2.1	0.6	6.1
Rented.....	92	11	6	2,641	188	319	5.9	0.7	0.9
Electric.....	92	11	6	2,456	163	169	5.9	0.6	0.5
Other.....				185	25	150	0.1	0.1	0.4
Electric power, total.....	2,131	1,070	514	29,276	27,230	12,890	100.0	100.0	100.0
Rented.....	92	11	6	2,456	163	169	8.4	0.6	1.3
Generated by establishments reporting.....	2,039	1,059	508	26,820	27,067	12,721	91.6	99.4	98.7

¹ Error in 1909 figures. Should show 8 water wheels, with horsepower of 1,185.

Fuel.—Table 14 shows, for 1914 and 1909, the quantity of each of the principal kinds of fuel consumed in the industry.

Table 14

FUEL CONSUMED.	Unit.	1914	1909
Anthracite coal.....	Tons, 2,240 pounds.	101,240	112,330
Bituminous coal.....	Tons, 2,000 pounds.	648,430	637,693
Coke.....	Tons, 2,000 pounds.	1,054	1,006
Oil, including gasoline.....	Barrels.....	6,280	30,418
Gas.....	1,000 cubic feet.....	276	36

The total cost of fuel and rented power in 1914 was \$1,345,055, as compared with \$1,255,639 in 1909.

Statistics in detail.—Table 15 presents, for 1914 and 1909, detailed statistics for each branch of the industry separately, and for the two branches combined.

The principal statistics covering the glucose and starch industry for 1909 were presented by states; but, for reasons already set forth (see section headed "Scope of the report"), it has been decided to eliminate all state statistics from this report.

Table 15

	Cen- sus year.	Total for the industry.	ESTABLISHMENTS ENGAGED PRIMARILY IN MANUFACTURING—			Cen- sus year.	Total for the industry.	ESTABLISHMENTS ENGAGED PRIMARILY IN MANUFACTURING—	
			Glucose.	Starch.				Glucose.	Starch.
Number of establishments.....	1914 1909	1 89 2 118	7 8	82 110	Salaries and wages—Continued.	1914 1909	\$621,855 \$560,025	\$415,082 \$368,897	\$208,773 \$192,628
Persons engaged.....	1914 1909	5,957 5,827	3,647 3,454	2,310 2,373	Officials.....	1914 1909	\$1,318,277 \$852,314	\$863,135 \$588,691	\$425,142 \$263,623
Proprietors and firm members.....	1914 1909	70 86	6 8	70 80	Clerks and other subordinate sala- ried employees.....	1914 1909	\$3,549,565 \$2,666,483	\$2,326,980 \$1,637,324	\$1,222,585 \$1,029,159
Salaried officers, superintendents, and managers.....	1914 1909	170 141	88 52	82 89	Wage earners.....	1914 1909	\$16,394 \$3,820	\$14,522	\$1,872 \$3,820
Clerks and other subordinate sala- ried employees.....	1914 1909	1,208 827	830 548	378 279	Paid for contract work.....	1914 1909	\$217,529 \$369,628	\$119,997 \$232,385	\$97,532 \$137,243
Male.....	1914 1909	1,006 700	695 464	311 236	Rent and taxes.....	1914 1909	\$9,369 \$147,096	\$9,369 \$140,000	\$9,369 \$7,096
Female.....	1914 1909	202 127	135 84	67 43	Rent of factory.....	1914 1909	\$208,160 \$222,532	\$119,997 \$232,385	\$88,163 \$130,147
Wage earners (average number)....	1914 1909	4,509 4,773	2,729 2,648	1,780 1,925	Taxes (including internal revenue).....	1914 1909	\$40,207,592 \$36,898,771	\$29,909,655 \$25,271,792	\$10,297,937 \$11,629,979
Number, 15th day of maximum month.....	1914 1909	Mh Oc	Ja No	Mh Oc	Cost of materials.....	1914 1909	\$38,962,537 \$35,643,132	\$28,698,453 \$24,369,265	\$11,629,979 \$11,273,847
Number, 15th day of minimum month.....	1914 1909	No Au	No Au	An Ap	Principal materials.....	1914 1909	\$1,345,055 \$1,255,639	\$911,292 \$602,507	\$453,853 \$333,132
Wage earners Dec. 15, or nearest representative day.....	1914 1909	5,453 5,559	3,060 2,963	2,393 2,596	Fuel and rent of power.....	1914 1909	\$52,615,401 \$48,799,311	\$38,619,383 \$32,930,818	\$13,996,018 \$15,868,503
16 years of age and over.....	1914 1909	5,450 5,549	3,058 2,962	2,392 2,587	Value of products.....	1914 1909	\$12,407,809 \$11,900,540	\$8,709,728 \$7,659,126	\$3,698,081 \$4,241,414
Male.....	1914 1909	5,015 5,112	2,818 2,785	2,197 2,327	Value added by manufacture.....	1914 1909	41,639 28,257	24,590 16,923	17,049 11,334
Female.....	1914 1909	435 437	240 177	195 260	Steam engines and turbines.....	1914 1909	38,003 27,835	23,374 16,833	14,629 11,002
Under 16 years of age.....	1914 1909	3 10	2 1	1 9	Internal-combustion engines.....	1914 1909	74 893	32 893	255 893
Male.....	1914 1909	6 4	1 1	5 1	Water wheels and motors.....	1914 1909	185 2,456	185 1,184	185 1,272
Female.....	1914 1909	1 4	1 4	1 4	Electric (rented).....	1914 1909	163 163	90	73
Capital.....	1914 1909	\$43,642,343 \$38,866,419	\$26,572,403 \$21,446,328	\$17,069,940 \$17,420,091	Electric horsepower generated in es- tablishments reporting.....	1914 1909	26,820 27,067	15,882 17,562	10,938 9,505
Salaries and wages.....	1914 1909	\$5,489,607 \$4,079,722	\$3,638,197 \$2,594,912	\$1,851,500 \$1,484,810					

¹ Comprises 51 establishments in Maine, 7 in Minnesota, 5 in Illinois, 4 in Massachusetts, 3 each in Connecticut, Indiana, and Iowa, 2 each in New York and Ohio, and 1 each in California, Florida, Maryland, Michigan, Missouri, Nebraska, New Jersey, Pennsylvania, and Wisconsin.

² Comprises 64 establishments in Maine, 13 in Minnesota, 5 each in Illinois, Iowa, and New York, 4 each in Indiana and Massachusetts, 3 in Connecticut, 2 each in Florida, New Jersey, Ohio, and Pennsylvania, and 1 each in California, Colorado, Maryland, Michigan, Mississippi, Nebraska, and Wisconsin.

³ Includes rented power, other than electric.

⁴ Error in 1909 figures. Should show 8 water wheels, with horsepower of 1,185.

Process of manufacture.—The process of converting corn—the principal material used in this industry—into glucose, starch, and subsidiary products, is as follows:¹

"The corn is stripped from the hull and then steeped in water which has been impregnated with sulphur, and after soaking some time fresh water comes upon the corn, and the substances which are not useful for the starch go into this water and are carried off.

"The kernel, after it has been soaked, is quite soft, and the first process is to run it between two plates of rough coarse teeth revolving in opposite directions, which breaks up the corn and disintegrates the germ from the rest of the kernel. The kernel so disintegrated is, with water, run into vats, where the germ, being the lightest, floats to the top of the milky emulsion and flows over into a separate container. There remains in the emulsion the starch proper and the husk, which goes to a second grinder where it is ground to a very soft pulp, which goes into revolving silk screens. The result is a separation from the husk, and through the meshes of the silk flows a true emulsion of starch and water.

"The next process is to reclaim from the emulsion the starch proper, by separating it from the gluten. The emulsion is poured upon tables, where it would of itself settle (the starch at the bottom and the gluten at the top, it being the lighter), but before the starch

is entirely concentrated assistance is given at the bottom by automatic scrapers, which carries the starch out in a condition of about 40 per cent starch and the rest water. This is put into vats, where under a marked agitation a small percentage of acid is added to the mixture, which results in combining the starch and water without entering or disturbing the starch. An alkali (soda ash) is then added, which combines with the acid and forms common salt.

"The next process is to strain off the salt and impurities, which is done by passing the mixture through cloth filters and then through bone-black filters, and it emerges a clear crystal fluid which constitutes the glucose itself.

"Grape sugar is made by adding more water and a larger percentage of acid to the starch emulsion than in the making of glucose. This emerges from the filter a thick, brownish-yellow fluid, which is converted into sugar merely by being poured into open pans and allowed to crystallize.

"When the gluten was separated there still remained with it considerable starch. This is run through a pipe to a long table, when the gluten, being lighter, goes to the top until finally all of the starch has been precipitated and the gluten has floated off with the water. The paste remaining is placed in kilns, through which for some days hot air is constantly blown until all the moisture has been evaporated and the result is the marketable starch to be broken up as may be necessary for the trade. There are several by-products which for the most part go to the making of stock feed."

¹ From statement by Justice Hand, in the District Court of the United States for the Southern District of New York, January 17, 1916, in re U. S. v. Corn Products Refining Co.

SPECIAL STATISTICS RELATING TO MATERIALS AND PRODUCTS.

Materials.—Table 16 presents statistics of the principal materials used in the industry for 1914 and 1909. Corn is by far the most important material used in the manufacture of glucose and starch. Computed on the basis of 56 pounds to the bushel, the corn used in 1914 amounted to 44,442,722 bushels, as against 40,009,088 bushels in 1909. The increases in quantity and cost of this material during the five-year period amounted to 11.1 per cent and 13.2 per cent, respectively. There were, however, considerable decreases in both quantities and cost of potatoes and wheat flour used in the industry. The consumption of the former decreased in quantity from 3,510,135 bushels (60 pounds to the bushel) in 1909 to 2,831,313 bushels in 1914, or by 19.3 per cent, and in cost by 8 per cent; and that of the latter declined in quantity by 27.4 per cent and in cost by 37.5 per cent. The decline in the consumption of potatoes is due to the fact that a number of potato-starch factories in Maine and other states went out of business between 1909 and 1914.

Some of the establishments engaged in "reprocessing" and mixing starch (to which reference has al-

ready been made in the discussion of Table 1) purchase as their material the cornstarch manufactured by other establishments in the industry, which results in duplication in both materials and products. The amount of this duplication, however, as will be seen by reference to the item "cornstarch," in Table 16, was very much less in 1914 than in 1909. The reduction was due to the fact that during the five-year period several large establishments discontinued the business of reprocessing and reworking starch purchased from others.

Table 16	MATERIAL.	1914	1909
	Total cost.....	\$40,207,592	\$36,898,771
Corn:	Pounds.....	2,488,792,405	2,240,508,915
	Cost.....	\$30,207,562	\$26,674,779
Potatoes:	Pounds.....	169,878,784	210,608,127
	Cost.....	\$498,015	\$541,359
Wheat flour:	Pounds.....	14,198,049	19,545,824
	Cost.....	\$301,560	\$452,263
Cornstarch:	Pounds.....	9,812,659	105,299,010
	Cost.....	\$189,296	\$1,763,173
	All other materials, including fuel and rent of power, cost.....	\$9,011,159	\$7,437,197

Products.—The principal business of the establishments manufacturing "starch" is the extraction, from corn, potatoes, and wheat flour, of the carbohydrate known as starch. The principal products of the glucose factories are glucose or "corn sirup," starch, "grape sugar" (the solid variety of glucose, so called because it is found in ripe grapes rather than because it is produced from grapes), corn oil, corn-oil cake and meal, and stock feed.

The total value of products given in the table does not include the values of starches and of refined and blended sirups manufactured from corn and other materials by establishments engaged primarily in other industries, nor the value of glucose manufactured for their own use by establishments producing sirups, jams, jellies, etc. The values of such sirups and glucose can not be given without disclosing the operations of individual establishments; but the value of starch manufactured by establishments in other industries in 1914 amounted to \$101,817.

During the period 1904-1909 the total value of products of the industry increased by 49.5 per cent, but the corresponding increase for the following five-year period amounted to only 7.8 per cent.

Although there was an apparent decrease from 1909 to 1914 of 56,771,300 pounds in the total production of starch, the net output actually increased, as will be seen by deducting from the total given for each year the amount (shown under the heading "cornstarch," in Table 16) purchased from other establishments in the

industry by concerns engaged in reprocessing or mixing starches. The elimination of this duplication, which was very much less in 1914 than in 1909, leaves 564,435,038 pounds as the amount of marketable cornstarch produced in the later year, as against 533,526,536 pounds in the earlier, representing an increase of 5.8 per cent.

During the period 1909-1914 there were increases in the quantities and values of glucose, grape sugar, and corn oil, and in the values of stock feed and "all other products."

Table 17	1914	1909
Products, total value.....	\$52,615,401 ¹	\$48,799,311
Starch:		
Pounds.....	620,764,347	677,535,647
Value.....	\$15,783,781	\$17,514,823
Corn—		
Pounds.....	574,247,697	638,825,366
Value.....	\$13,784,654	\$15,962,916
Potato—		
Pounds.....	23,540,472	24,873,415
Value.....	\$718,006	\$823,019
Other starches—		
Pounds.....	22,976,178	13,836,866
Value.....	\$1,281,121	\$728,888
Glucose (including all sirups).....	\$18,541,429	\$17,922,514
Grape sugar:		
Pounds.....	174,368,818	159,060,478
Value.....	\$3,765,515	\$3,620,516
Corn oil:		
Gallons.....	8,861,579	8,164,175
Value.....	\$3,693,163	\$2,802,768
Corn-oil cake and meal:		
Pounds.....	143,001,065	(²)
Value.....	\$1,829,305	(²)
Stock feed, value.....	\$6,690,412	\$6,013,968
All other products, value.....	\$2,311,796	\$924,422

¹ In addition, starches to the value of \$101,817 were reported by establishments engaged primarily in other industries.

² Not reported separately.

RICE CLEANING AND POLISHING.

By HARVEY J. ZIMMERMAN.

SUMMARY AND ANALYSIS.

Scope of the industry.—Rough rice, the material used in this industry, generally reaches the mill in the same condition in which it leaves the thrasher and contains more or less dirt and other foreign substances. The mills clean the rough rice, remove the outer shell, or hull, and the inner cuticle, or bran, and usually polish the grain. At one time rice was generally cleaned on the plantations producing it, but now, with the exception of small quantities produced outside of the important rice-growing districts, it is all treated in specially equipped mills. For years it was the practice to give the rice a high polish in order to improve its appearance, but it has been found that this treatment results in removing some of the most nutritious parts of the grain, and the use of rice which has been subjected to little or no polishing is now coming into favor.

Location and character of rice mills.—The change in the habitat of rice in the United States has necessarily brought about a change in the location of the rice mills. Whereas most of the cleaning and polishing establishments were formerly in the Carolinas and Georgia, the industry in these states has almost disappeared and now nearly all the mills are located in Louisiana, Texas, and Arkansas, with a few small ones in the Pacific coast cities. Practically all of the rice is handled in mills engaged exclusively in this work, only very small quantities being treated

in establishments engaged primarily in other lines of industry.

Formerly the rough rice was generally milled on contract for a stipulated price, or for a portion of the rice itself. With the erection of the larger and more up-to-date mills in the new rice-growing districts, however, has come the general practice of buying the rough rice outright, milling it, and selling the various products obtained. The industry has accordingly changed almost entirely from a custom-milling to a merchant-milling basis. As a result of the erection of these larger mills, there has been a gradual reduction in the number of establishments engaged in cleaning rice. This tendency was especially pronounced from 1909 to 1914.

Period covered.—This industry being a seasonal one, the returns generally relate to the season of 1913-14; that is, the milling of rice from the crop of 1913. This plan permitted the collection of data for a uniform season, namely, the business year of the concerns engaged in the industry, thus making available statistics which are obviously of greater value than if a portion of the returns related to one season, another portion to another season and still another portion to parts of two seasons.

Summary and comparison with earlier censuses.—The statistics of the rice-milling industry in the United States are summarized in Table 1 for each census from 1879 to 1914, inclusive.

Table 1	RICE CLEANING AND POLISHING.						PER CENT OF INCREASE. ¹				
	1914	1909	1904	1899	1889	1879	1909-1914	1904-1909	1899-1904	1889-1899	1879-1889
Number of establishments.....	59	71	74	80	32	22	-16.9	-4.1	-7.5	150.0	45.6
Persons engaged in the industry.....	1,739	1,777	1,961	891	(?)	(?)	-2.1	-9.4	120.1	.....	.....
Proprietors and firm members.....	48	38	33	71	(?)	(?)	26.3	15.2	-52.5	.....	.....
Salaried employees.....	438	600	436	169	(?)	(?)	-12.4	14.7	158.0	.....	.....
Wage earners (average number).....	1,253	1,239	1,492	651	647	516	1.1	-17.0	129.2	0.6	28.4
Primary horsepower.....	15,571	19,519	15,866	7,546	4,120	(?)	-20.2	28.0	119.3	82.2	298.9
Capital.....	\$12,626,090	\$13,347,144	\$8,821,069	\$2,601,352	\$2,073,884	\$562,200	-5.4	81.3	239.1	26.4	.....
Salaries and wages.....	1,284,034	1,176,623	1,189,194	447,618	(?)	(?)	9.1	-1.1	165.7	.....	.....
Salaries.....	638,171	613,085	548,562	182,033	(?)	(?)	4.1	11.8	201.4	.....	.....
Wages.....	645,863	563,538	640,632	265,585	225,433	110,467	14.6	-12.0	141.2	18.9	162.9
Rent and taxes.....	83,222	90,269	68,411	44,325	(?)	(?)	-7.8	32.0	64.3	.....	.....
Cost of materials.....	20,615,860	19,501,080	12,315,065	7,575,522	5,601,306	2,666,497	5.7	46.5	75.8	38.2	110.1
Value of products.....	23,039,294	22,371,457	16,296,916	8,723,726	6,693,196	3,133,324	3.0	37.3	86.5	20.3	112.6
Value added by manufacture (value of products less cost of materials).....	2,423,434	2,870,377	2,981,851	1,148,204	1,091,990	466,827	-15.6	-3.7	159.7	5.1	132.9

¹ A minus sign (-) denotes decrease.

² Comparable figures not available.

In 1914 there were 59 establishments engaged primarily in the cleaning and polishing of rice. This number shows a reduction of 12, as compared with 1909, and of 21, as compared with 1899. The de-

crease from 1909 to 1914 is accounted for largely by the reduction in Louisiana, where a number of establishments active during the former year were not in operation in 1914. In some instances, the work done

by several mills in 1909 was performed by a single establishment in 1914. There were also decreases of a few establishments in Texas and along the Atlantic seaboard, and, on the other hand, a decided increase in the Pacific coast cities. Although a few establishments engaged primarily in other industrial activities also milled small quantities of rice, the total quantity treated by them was negligible.

The number of persons engaged in the industry in 1914 was 1,739, a loss of 38, or 2.1 per cent, as compared with 1909. The value of products in the later year was \$23,039,294, which compares with \$22,371,457 in the earlier, an increase of 3 per cent. The statistics of persons engaged in the industry at the censuses of 1879 and 1889 are not strictly comparable with those for the later years. It is evident,

however, that the improvements in machinery and in methods of treatment have resulted in a disproportionate growth in value of products and of rough rice milled, as compared with the number of persons engaged; in fact, although there was some increase in the number of wage earners from 1899 to 1904, the number has actually decreased since the later year.

General statistics, by states.—The principal data secured by the census inquiry concerning the rice-cleaning and polishing industry are presented by states in Table 2, which shows, for the last four censuses, the number of establishments, average number of wage earners, primary horsepower, capital, wages, cost of materials, value of products, and value added by manufacture.

Table 2

STATE.	Census year.	Number of establishments.	Wage earners (average number).	Primary horsepower.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
					Expressed in thousands.				
United States.....	1914	59	1,253	15,571	\$12,627	\$646	\$20,616	\$23,039	\$2,423
	1909	71	1,239	19,519	13,347	564	19,501	22,371	2,870
	1904	74	1,492	15,866	8,821	641	13,315	16,297	2,982
	1899	80	651	7,546	2,601	266	7,576	8,724	1,148
Arkansas.....	1914	5	116	1,520	625	48	1,705	1,837	132
	1909	5	37	1,010	575	23	852	945	93
	1904								
	1899								
Louisiana.....	1914	24	735	7,742	8,066	368	11,694	12,967	1,273
	1909	37	693	10,706	8,385	327	10,971	12,529	1,553
	1904	43	923	10,333	6,138	400	8,973	10,713	1,745
	1899	37	412	5,079	1,818	181	4,954	5,736	782
Texas.....	1914	16	345	5,365	3,395	199	6,366	7,216	850
	1909	19	430	6,274	3,820	189	7,122	8,142	1,020
	1904	17	432	4,509	2,139	212	8,508	4,640	1,132
	1899								
Washington.....	1914	9	11	108	65	6	198	262	64
	1909	3	5	20	15	3	44	62	18
	1904	4	6	27	15	3	34	40	6
	1899								
All other states ²	1914	5	46	836	448	25	653	757	104
	1909	7	74	909	552	22	512	693	131
	1904	10	131	997	529	26	800	899	99
	1899	43	239	2,467	783	85	2,622	2,988	366

¹ Figures included under "All other states."

² All other states embrace: For 1914—California, 2 establishments; Oregon, 1; South Carolina, 1; Tennessee, 1. For 1909—Georgia, 2; North Carolina, 1; Oregon, 1; South Carolina, 3. For 1904—California, 1; Georgia, 3; North Carolina, 1; Oregon, 1; South Carolina, 4. For 1899—Alabama, 4; California, 1; Florida, 4; Georgia, 4; Mississippi, 2; New York, 2; North Carolina, 4; Oregon, 1; South Carolina, 18; Texas, 1; Washington, 2.

Except in the case of the Pacific coast cities, where only foreign rice was treated, the mills were generally located in the immediate vicinities where the rice was grown. Louisiana reported 56.3 per cent of the total value of products, Texas 31.3 per cent, and Arkansas 8 per cent, these three states combined contributing 95.6 per cent of the total for the country.

As previously stated, there has been a great change in the location of the rice-milling industry. For 1899 Alabama, Florida, Georgia, Mississippi, North Carolina, and South Carolina reported 36 mills, but in 1914

only one rice mill (located in South Carolina) was in operation in any of these six states. On the other hand, the number of establishments in Texas increased from 1 in 1899 to 16 in 1914; Arkansas, which had none in 1899, reported 5 in 1914; and Washington, with 2 in 1899, reported 9 in 1914. The mills on the Pacific coast are designed to meet the demands of the oriental peoples living there for a rice product similar to that used in their native countries.

Table 3 gives more detailed statistics, by states, for 1914.

Table 3

	United States.	Arkansas.	Louisiana.	Texas.	Washington.	All other states. ¹
Number of establishments.....	59	5	24	16	9	5
Persons engaged in the industry.....	1,739	162	961	487	67	62
Proprietors and firm members.....	48	6	6	4	42	7
Salaried officers, superintendents, and managers.....	106	14	38	46	1	9
Clerks, etc.....	332	52	182	96	13	8
Male.....	319	30	176	92	13	8
Female.....	13	2	6	4	1	1
Wage earners.....	1,253	116	735	345	11	46
Average number.....	1,253	116	735	345	11	46
Number, 15th day of month—						
Maximum, month.....	November.	January.	September.	February.	May.	
Number.....	1,852	228	1,123	502	12	
Minimum, month.....	July.	June.	July.	July.	April.	
Number.....	332	18	142	131	10	
Wage earners, Dec. 15, or nearest representative day.....	2,028	216	1,199	522	11	80
16 years of age and over.....	2,024	216	1,199	518	11	80
Male.....	2,017	216	1,199	511	11	80
Female.....	7			7		
Under 16 years of age.....	4			4		
Male.....	4			4		
Female.....						
Capital.....	\$12,626,990	\$624,864	\$8,095,663	\$3,395,447	\$64,714	\$448,302
Salaries and wages.....	\$1,284,034	\$104,734	\$724,855	\$392,776	\$15,240	\$45,429
Officials.....	\$260,461	\$30,480	\$130,291	\$95,615	\$900	\$12,475
Clerks, etc.....	\$377,710	\$26,010	\$226,631	\$106,550	\$8,460	\$9,755
Wage earners.....	\$645,863	\$48,244	\$367,933	\$199,311	\$6,180	\$24,135
Rent and taxes.....	\$83,222	\$4,966	\$37,406	\$30,119	\$3,255	\$7,496
Rent of factory.....	\$14,447		\$4,700	\$5,162	\$2,765	\$1,600
Taxes, including internal revenue and corporation income.....	\$68,775	\$4,966	\$32,706	\$24,957	\$1,485	\$5,896
Cost of materials.....	\$20,615,890	\$1,705,516	\$11,694,030	\$6,396,187	\$197,350	\$652,737
Principal materials.....	\$20,524,272	\$1,702,180	\$11,642,321	\$6,339,739	\$195,684	\$647,358
Fuel and rent of power.....	\$91,588	\$3,356	\$51,709	\$29,445	\$1,636	\$5,439
Value of products.....	\$23,039,294	\$1,837,478	\$12,966,690	\$7,216,559	\$261,655	\$756,554
Value added by manufacture (value of products less cost of materials).....	\$2,423,434	\$131,962	\$1,272,660	\$650,172	\$64,066	\$104,037
Power.....						
Primary horsepower.....	15,571	1,520	7,742	5,365	106	205
Steam engines and turbines.....	13,927	1,520	6,830	5,082		405
Internal-combustion engines.....	82		40	42		
Electric (rented).....	1,562		872	241	108	341
Electric horsepower generated by establishments reporting.....	408	26	27	350		5

¹ All other states embrace: California, 2 establishments; Oregon, 1; South Carolina, 1; Tennessee, 1.

Persons engaged in the industry.—Table 4 shows, for 1909 and 1914, the number of persons engaged in the rice cleaning and polishing industry, classified according to occupational status and sex, and, in the case of wage earners, according to age. It should be borne in mind that the sex and age classifications of the average number of wage earners in this and other tables are estimates obtained by the method described under "Explanation of terms."

CLASS.	Census year.	PERSONS ENGAGED IN THE INDUSTRY.		
		Total.	Male.	Female.
All classes.....	1914	1,739	1,722	17
	1909	1,777	1,766	21
Proprietors and officials.....	1914	154	154	
	1909	182	181	1
Proprietors and firm members.....	1914	48	48	
	1909	38	37	1
Salaried officers of corporations.....	1914	37	37	
	1909	43	43	
Superintendents and managers.....	1914	69	69	
	1909	101	101	
Clerks and other subordinate salaried employees.....	1914	332	319	13
	1909	356	340	16
Wage earners, (average number).....	1914	1,253	1,249	4
	1909	1,239	1,235	4
16 years of age and over.....	1914	1,250	1,246	4
	1909	1,235	1,231	4
Under 16 years of age.....	1914	3	3	
	1909	4	4	

The average number of persons engaged in the industry in 1914 was 1,739, of whom 1,253, or 72 per cent, were wage earners; 154, or 8.9 per cent, proprietors and officials; and 332, or 19.1 per cent, clerks

and other subordinate salaried employees. Of the total, 1,722, or 99 per cent, were males. The numbers of females and of males under 16 years of age employed as wage earners were negligible.

The number of wage earners employed on the 15th of each month during the season of 1913-14 was as follows: August, 608; September, 1,567; October, 1,701; November, 1,852; December, 1,848; January, 1,758; February, 1,690; March, 1,342; April, 1,175; May, 819; June, 344; and July, 332. The largest number was reported for November and the smallest for July, the minimum forming 17.9 per cent of the maximum. The height of the rice-milling season extended from September to February, inclusive, during which period the average number of wage earners fluctuated from 1,567 to 1,852.

The average number of wage earners for each state, as reported at the last four censuses, is given in Table 2, while Table 3 shows, by states, the sex and age distribution of the wage earners employed on December 15, 1913, or the nearest representative day.

Prevailing hours of labor.—The prevailing hours of labor per week in the rice mills ranged from 66 to 72 hours. The average number of wage earners in establishments falling within this range formed 92.1 per cent of the total, and the value of the products of such establishments represented 91.7 per cent of the total.

Character of ownership.—Of the establishments engaged in rice milling in 1914, 51 were operated by corporations, 4 by individuals, and 4 by firms. Of the wage earners, 1,171, or 93.5 per cent, were employed by corporations; 27, or 2.1 per cent, by individuals;

and 55, or 4.4 per cent, by firms. The proportions of the total value of products reported by establishments under the three forms of ownership were as follows: Corporations, 91 per cent; individuals, 3.5 per cent; and firms, 5.5 per cent.

Establishments classified according to size.—In 1914, 4 establishments each reported a value of products in excess of \$1,000,000, their combined output amounting to \$5,128,577, or 22.3 per cent of the total for the industry; and 44 establishments with products valued at more than \$100,000 but less than \$1,000,000 each, the value of their aggregate output being \$17,634,691, or 76.5 per cent of the total. The mills in these two groups combined, that is, all those having products valued at \$100,000 or more, constituted 81.4 per cent of the total number of establishments, employed 98 per cent of the wage earners, and reported 98.8 per cent of the total value of products. The smaller mills, those having products valued at less than \$100,000, although their number constituted nearly one-fifth of the total, treated only a very small proportion of the entire quantity of rice milled. Fourteen establishments each treated less than 100,000 bushels (45 pounds to the bushel); 14 treated between 100,000 and 300,000 bushels; 11, between 300,000 and 500,000 bushels; 14, between 500,000 and 1,000,000 bushels; and 6, over 1,000,000 bushels.

Engines and power.—Table 5 shows, for the rice cleaning and polishing industry, the number of engines or other motors, according to their character, employed in generating power (including electric motors operated by rented current) together with their total horsepower, as reported at the last four censuses. It also shows separately the number and horsepower of electric motors (a) operated by rented current and (b) operated by current generated in the establishments using them.

POWER.	NUMBER OF ENGINES OR MOTORS.				HORSEPOWER.			
	1914	1909	1904	1899	1914	1909	1904	1899
Primary power, total.....	120	154	112	(1)	15,571	19,519	15,866	7,546
Owned.....	71	130	106	99	14,009	18,404	15,774	7,286
Steam engines and turbines..	68	125	106	90	13,927	18,252	15,774	7,002
Internal-combustion engines.	3	4			82	137		
Water wheels, turbines, and motors.....		1		9		15		264
Rented—Electric.....	49	24	6	(1)	1,562	1,115	92	280
Electric.....	74	54	24	(1)	1,970	1,738	477	307
Rented.....	49	24	6	(1)	1,562	1,115	92	280
Generated by establishments reporting.....	25	30	18	2	408	623	385	27

¹ Not reported.

The total primary power reported for the industry amounted to 7,546 horsepower in 1899, 19,519 in 1909, and 15,571 in 1914. Steam power constituted 92.8 per cent of the total in 1899, 99.4 per cent in 1904, 93.5

per cent in 1909, and 89.4 per cent in 1914. The decrease in the proportion of steam power since 1904 has been due to the relatively large increase in the indicated capacity of electric motors run by purchased current (rented electric power). All the power reported for California, Oregon, and Washington was of this character, and these three states, together with the city of New Orleans, accounted for practically all the rented electric power returned for the industry.

Fuel.—Closely related to the subject of power is that of fuel. The total cost of fuel and of rented power for the industry in 1914, as shown by Table 3, was \$91,588. The fuel consumed included 9,536 tons of coal and 41,479 barrels of oil, the entire quantity of the latter being returned for Louisiana and Texas, where it is generally used in generating steam power. A few mills use wood as fuel and a number the hulls obtained in cleaning the rough rice, but no data as to quantities were collected.

Materials and products.—The special schedule used in collecting the statistics for the rice cleaning and polishing industry provided for reporting the quantities of domestic and foreign rough rice treated and the quantities and values of the various products manufactured. Table 6 shows these statistics, by states, for the last four censuses, so far as available.

The quantity of rough rice treated increased from 398,602,018 pounds in 1899 to 999,727,650 pounds in 1904, and to 1,036,587,825 pounds in 1914, the gain during the 15-year period being 160 per cent. The great bulk of this increase, however, took place during the period from 1899 to 1904.

In 1914 clean rice represented 65.1 per cent, by weight, of the rough rice milled. This compares with 64.2 per cent in 1909, 62.4 per cent in 1904, and 61 per cent in 1899, thus showing a continuous increase. This increase was due, not only to improvements in mill equipment and to better methods of treatment, but also to changes in the proportions of the different varieties of rough rice treated. In recent years much attention has been given to the selection of seed, with special reference to the yield and to the milling qualities, and this naturally has brought about an increase in the proportion of clean rice obtained, as well as in whole rice as distinguished from broken rice. The proportion of clean rice obtained varies considerably in the several states. In Arkansas it was 63.4 per cent in 1914; in Louisiana, 64.5 per cent; in Texas, 65.6 per cent; and in Washington, 95.8 per cent. The rice handled in Washington was imported hulled rice and was not polished by the mills, the only substance removed being the bran. Hulls, while employed to some extent for packing ice, crockery ware, etc., are generally used for fuel. The exportation of hulls during the fiscal year 1913 amounted to nearly \$200,000, Germany and Belgium taking practically the entire amount.

Table 6	Census year.	United States.	Arkansas.	Louisiana.	Texas.	Washington.	All other states. ¹
Number of establishments.....	1914	59	5	24	16	9	5
	1909	71	5	37	19	3	7
	1904	74		43	17	4	10
	1899	80		37	(²)	(²)	43
Rough rice treated, aggregate, pounds.....	1914	1,036,587,825	82,086,840	607,616,370	315,169,065	4,728,960	26,996,590
	1909	974,747,475	37,014,075	540,002,250	371,816,370	1,860,170	24,554,610
	1904	999,727,650		635,010,835	316,170,405	788,985	47,757,375
	1899	398,602,018		290,163,708	(²)	(²)	198,436,310
Domestic, total, pounds.....	1914	1,025,628,075	82,086,840	607,616,370	315,169,065		20,755,800
Honduras type, pounds.....	1914	562,837,320	61,941,645	286,083,675	203,332,545		11,479,455
Japan type, pounds.....	1914	454,067,775	20,145,195	319,032,315	111,656,520		3,233,745
All other types, pounds.....	1914	8,722,980		2,600,380	180,000		6,042,600
Foreign, pounds.....	1914	10,950,750				4,728,960	6,220,790
Products, total value.....	1914	\$23,039,294	\$1,837,478	\$12,966,690	\$7,216,359	\$261,933	\$756,834
	1909	\$22,371,457	\$944,726	\$12,528,656	\$8,142,438	\$62,505	\$603,132
	1904	\$16,296,916		\$10,718,311	\$4,640,269	\$40,390	\$498,026
	1899	\$8,723,726		\$5,736,451	(²)	(²)	\$2,987,275
Clean rice—							
Pounds.....	1914	674,872,108	52,038,773	391,728,722	206,724,899	4,530,600	19,849,114
	1909	626,089,489	23,197,442	351,302,414	236,117,295	1,229,090	14,243,338
	1904	623,900,245		394,744,386	197,433,320	713,913	21,006,026
	1899	243,031,200		173,632,724	(²)	(²)	69,398,476
Value.....	1914	\$21,655,105	\$1,735,201	\$12,106,776	\$6,840,320	\$259,275	\$713,533
	1909	\$20,685,982	\$810,421	\$11,640,318	\$7,571,780	\$61,043	\$602,420
	1904	\$15,357,133		\$10,110,144	\$4,352,058	\$40,155	\$654,726
Polish—							
Pounds.....	1914	31,053,118	2,460,470	17,984,219	9,856,739		731,740
	1909	29,821,813	1,105,072	17,558,068	10,402,638		756,035
	1904	33,290,331		22,526,750	9,500,830		1,282,731
	1899	15,134,648		11,491,319	(²)		3,643,329
Value.....	1914	\$352,271	\$26,984	\$206,963	\$107,198		\$11,126
	1909	\$362,052	\$12,275	\$207,317	\$132,258		\$10,202
	1904	\$267,647		\$178,008	\$77,578		\$11,461
Bran—							
Pounds.....	1914	99,403,200	7,475,501	60,325,729	29,251,625	200,045	2,150,390
	1909	91,208,529	3,224,991	55,215,995	29,505,946	131,000	3,130,597
	1904	120,694,130		74,531,334	40,772,421	69,372	5,321,003
	1899	69,265,012		50,243,288	(²)	(²)	19,021,724
Value.....	1914	\$772,275	\$57,063	\$463,692	\$228,199	\$2,464	\$30,827
	1909	\$736,215	\$24,456	\$404,442	\$276,535	\$662	\$30,129
	1904	\$501,193		\$303,886	\$169,647	\$145	\$27,515
All other products, value.....	1914	\$259,643	\$18,200	\$189,259	\$40,642	\$194	\$11,948
	1909	\$587,208	\$97,574	\$276,579	\$161,965	\$800	\$50,390
	1904	\$170,943		\$125,673	\$40,986		\$4,264

¹ All other states embrace: For 1914—California, 2 establishments; Oregon, 1; South Carolina, 1; Tennessee, 1. For 1909—Georgia, 2; North Carolina, 1; Oregon, 1; South Carolina, 3. For 1904—California, 1; Georgia, 3; North Carolina, 1; Oregon, 1; South Carolina, 4. For 1899—Alabama, 4; California, 1; Florida, 4; Georgia, 4; Mississippi, 2; New York, 2; North Carolina, 4; Oregon, 1; South Carolina, 18; Texas, 1; Washington, 2.

² Figures included under "All other states."

The report blanks for rice milling called for a classification of clean rice as "fancy head," "second head," "screenings," and "brewers." A number of the establishments, however, stated that they were unable to furnish exact data as to the division on this basis, and in such instances it was necessary to obtain estimates. This fact should be kept in mind in considering the following statement, which shows the quantities as returned for 1914:

Clean rice obtained, total (pounds).....	674,872,108
Fancy head.....	438,048,761
Second head.....	100,759,878
Screenings.....	65,689,614
Brewers.....	70,373,855

Merchant and custom milling.—The milling of rice on a custom basis has been steadily declining. In 1914 only 4 mills were operated exclusively on this basis, while 12 did both custom and merchant milling. The quantity of rough rice handled on a custom basis was 88,304,490 pounds, or 8.5 per cent of the total milled, and the amount received for toll was \$168,103.

Equipment and capacity.—Table 7 shows, by states, the number of shelling, scouring, and polishing machines in rice mills in 1914 and the estimated maximum capacity of rough rice per day of 24 hours.

Table 7	STATE.	Shelling stones (number).	Scouring machines (number).	Polishing machines (number).	Estimated maximum capacity of rough rice per day of 24 hours (bushels of 45 pounds).
	United States.....	176	382	146	276,426
	Arkansas.....	19	43	9	30,640
	Louisiana.....	94	190	75	139,660
	Texas.....	55	102	51	61,180
	Washington.....		25		1,546
	All other states.....	8	22	11	13,400

The hulling machines used are of many types, varying from the mechanically operated mortar and pestle to the highest type of rotary hulling machines. The polishing machines are as diversified as the hulling machines, some of them being skin pads operated in such a manner that the rice grains are treated by rubbing them against each other and against the pads.

In 1914, for all mills combined, the estimated maximum capacity of rough rice per day of 24 hours was 276,426 bushels of 45 pounds each. This compares with 341,409 bushels in 1909, showing a decrease of 64,983 bushels, or 19 per cent. Had all the mills reported as active in 1914 been operated continuously to their maximum capacity it would have required approximately 83 days to treat the total quantity of rough rice actually handled during the season.

Production of rice in the United States.—The rice plant requires much moisture, and it is necessary to resort to irrigation in supplying it. Formerly the entire production of rice in the United States was grown in the low-lying coastal lands adjacent to rivers, from which they were flooded. The nature of the land and the character of the irrigation works made rice growing in these localities both difficult and expensive. With the development of irrigation in the United States, however, it has been found expedient to use the level and somewhat elevated sections of Louisiana, Texas, and Arkansas for this culture. These sections, being easily drained, are well adapted to rice growing, and the plowing, harrowing, sowing, and reaping can be done in the same manner as for other grain crops. As a result, it is probable that the production of rice has undergone greater changes than that of any other crop grown in the United States.

As late as 1890, or 25 years ago, nearly all the American rice was grown near the Atlantic and Gulf coasts. The culture in these localities, however, has been practically discontinued and nearly the entire production of the country is now grown in the inland sections of Louisiana and Texas, and in Arkansas, in the order in which named. The agricultural censuses of 1899 and 1909 present statistics which are interesting as showing the extent of this change. In the former year the states of Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, and Mississippi reported 131,793 acres in rice, with a production of 2,530,659 bushels; Louisiana, 201,685 acres, with 6,213,397 bushels; Texas, 8,711 acres, with 258,520 bushels; and Arkansas, 25 acres, with 310 bushels. In 1909 the first group of states returned 27,640 acres in rice, with a production of 723,972 bushels; Louisiana, 317,518 acres, with 10,839,973 bushels; Texas, 237,586 acres, with 8,991,745 bushels; and Arkansas, 27,419 acres, with 1,282,830 bushels. These figures indicate a falling off in the first group of states, amounting to about four-fifths in acreage and nearly three-fourths in production, while enormous increases are shown for the three states last named. The Department of Agriculture estimated the acreage in rice in 1913 for the first group of states at only 7,800, with a production of 226,000 bushels. For the same year it estimated the production in Louisiana at 11,760,000 bushels; in Texas, at 9,696,000 bushels; in Arkansas, at 3,769,000 bushels; and in California, which in the

meanwhile had entered the list of producing states, at 293,000 bushels.

World's production of rice.—While the rice industry in the United States is an important one, it is very small when compared with that in some other countries; in fact, the American rice crop forms only about one-half of 1 per cent of the world's total production of this cereal. It is probable that the United States will never be able to compete on an extended scale with some of the other countries in this culture, both because her dependence on rice for food is not so great and because of the disparity in wages paid. Nevertheless, the extent of the industry in this country can undoubtedly be materially increased. The following table, compiled from data furnished by the Department of Agriculture, shows the production of rice in the more important countries growing this cereal:

COUNTRY.	Year.	Rice produced, cleaned (pounds).
British India (exclusive of Native States).....	1913	64,490,272,000
Ceylon.....	1913	356,191,000
China (3 provinces).....	1910	47,204,000,000
French Indo-China.....	1910	5,000,000,000
Java and Madura.....	1913	8,905,350,000
Japanese Empire:		
Japan.....	1913	15,787,969,000
Chosen (Korea).....	1913	3,050,798,000
Formosa.....	1913	1,610,461,000
Siam.....	1913	6,218,000,000
Federated Malay States.....	1913	87,321,000
Philippine Islands.....	1913	1,512,299,000
Russia (Asiatic).....	1913	512,383,000
Turkey (Asiatic).....	1910	137,333,000
Italy.....	1913	739,221,000
Spain.....	1913	303,310,000
Egypt.....	1913	505,118,000
Mexico.....	1912	220,460,000
Brazil (state of São Paulo).....	1913	109,625,000
Peru.....	1913	108,860,000
United States (Continental).....	1913	715,111,000

Imports and exports of rice and rice products.—During the fiscal year ending June 30, 1914, the United States imported 54,784,051 pounds of uncleaned rice, including paddy; 95,503,998 pounds of cleaned whole rice; and 139,906,868 pounds of broken rice, including small quantities of rice flour and meal. During the same year there were exported 18,223,264 pounds of domestic rice, 17,787,031 pounds of foreign rice, 4,191,062 pounds of rice bran and polish, and \$126,888 worth of hulls. Table 9 shows, by countries and customs districts, the quantities and values of the several rice products imported and exported during the fiscal year ending June 30, 1914.

Nearly the entire quantity of uncleaned rice imported came from Japan and was entered through the customs districts of Hawaii, San Francisco, and Washington. Of cleaned rice the Netherlands supplied the largest portion, being followed by China, the United Kingdom, Germany, and Hongkong, in the order in which named. The largest quantity was entered at New York, the next largest at San Francisco, and the third at New Orleans, these three districts accounting for 80 per cent of the total. The imports of broken

rice, which include some rice flour and meal, came principally from Germany and the Netherlands and were entered most largely in the customs districts of Maryland, New York, and Philadelphia.

Exports of rice from the United States are comparatively unimportant. Practically all of the do-

mestic rice exported during the fiscal year 1914 passed through the customs districts of New Orleans and Galveston, nearly two-thirds of the total having gone to Cuba. Of foreign rice exported from this country, the largest quantities were sent to Panama, Mexico, and Nicaragua, in the order in which named.

Table 9					
ARTICLE, COUNTRY, AND CUSTOMS DISTRICT.	Quantity (pounds).	Value.	ARTICLE, COUNTRY, AND CUSTOMS DISTRICT.	Quantity (pounds).	Value.
IMPORTS.			EXPORTS (DOMESTIC).		
Uncleaned rice (including paddy), total.....	54,784,051	\$1,917,058	Rice, total.....	18,223,264	\$721,046
From Japan.....	52,013,918	1,845,349	To Cuba.....	11,378,026	414,768
From all other countries.....	2,770,133	72,309	To Honduras.....	1,501,742	65,101
To Hawaii.....	33,619,921	1,175,766	To all other countries.....	5,343,496	241,177
To San Francisco.....	13,063,513	467,657	From New Orleans.....	10,824,632	452,277
To Washington.....	4,809,758	180,986	From Galveston.....	4,771,557	154,840
To all other customs districts.....	3,290,859	93,249	From all other customs districts.....	2,627,075	113,929
Cleaned rice, total.....	95,503,998	3,017,108	Rice bran and polish, total.....	4,191,062	36,274
From Netherlands.....	48,407,957	1,632,584	To Germany.....	4,033,894	34,913
From China.....	30,417,603	854,730	To all other countries.....	157,168	1,361
From United Kingdom.....	4,871,248	156,844	From New Orleans.....	3,864,422	33,254
From Germany.....	4,716,558	153,250	From all other customs districts.....	326,640	3,020
From Hongkong.....	4,189,440	150,573	Rice hulls, total.....		126,888
From all other countries.....	2,901,192	99,121	To Germany.....		90,177
To New York.....	38,446,374	1,275,178	To Belgium.....		34,261
To San Francisco.....	32,402,537	953,292	To all other countries.....		2,450
To New Orleans.....	6,467,976	205,775	From New Orleans.....		125,940
To all other customs districts.....	18,187,111	582,863	From Galveston.....		948
Broken rice (including rice flour and meal), total.....	139,906,868	2,538,941	EXPORTS (FOREIGN).		
From Germany.....	64,936,310	1,179,828	Uncleaned rice (including paddy), total.....	109,780	3,218
From Netherlands.....	37,579,083	680,125	To Canada.....	109,780	3,218
From United Kingdom.....	11,689,550	189,112	Cleaned rice, total.....	17,644,050	404,896
From Austria-Hungary.....	6,675,429	114,494	To Panama.....	6,273,153	125,664
From China.....	6,625,665	118,836	To Mexico.....	4,444,516	118,619
From Siam.....	5,478,126	99,387	To Nicaragua.....	2,280,616	48,716
From all other countries.....	6,922,705	151,139	To Costa Rica.....	975,047	20,726
To Maryland.....	43,263,373	773,942	To all other countries.....	3,670,713	91,171
To New York.....	32,307,751	578,065	Broken rice (including rice flour and meal), total.....	33,201	1,380
To Philadelphia.....	20,909,853	373,029			
To Washington.....	9,989,963	194,560			
To New Orleans.....	9,525,310	172,696			
To all other customs districts.....	23,910,618	446,649			

Rice shipments to and from noncontiguous territories of the United States.—During the fiscal year 1914 there were shipped from Hawaii to continental United States 3,974,280 pounds of rice, valued at \$178,310. During the same year there were shipped

from continental United States to Alaska 805,269 pounds, valued at \$38,311; to Hawaii, 5,031,515 pounds, valued at \$216,252; and to Porto Rico, 139,836,581 pounds, valued at \$5,306,364. Porto Rico is an important market for American rice.

THE SUGAR INDUSTRY.

By JAMES D. BOYLE.

SUMMARY AND ANALYSIS.

Summary for the industry.—This report presents statistics for the manufacture of cane and beet sugar and for cane-sugar refining. Practically all the mills engaged in the manufacture of sugar from the cane are located in Louisiana. No reports were secured from the small plantation mills in that and adjoining states, and no statistics in regard to them are included. Data for mills of this character are collected and published in connection with the decennial census of agriculture. The products of these small mills are largely consumed in the neighborhood and consist almost entirely of sirup. The omission of data relating to them does not, therefore, appreciably affect the statistics for the production of cane sugar. A considerable portion of the output of the establishments in the cane-sugar branch of the industry is not refined at the mills but is sent to the refineries, where it is made ready for consumption.

The refining branch of the industry represents establishments engaged primarily in the refining of cane sugar. The larger part of the raw sugar used by re-

fineries is imported, but there is some duplication in the total cost of materials and value of products for the three branches of the industry as given in Table 1, due to the fact that the raw sugar reported as the product of the cane-sugar mills forms a part of the "materials" used by the refiners.

The establishments engaged in the industry are naturally located in the sections of the country in which the material can be obtained with the greatest advantage. Thus, the beet-sugar factories are in the states in which sugar beets are grown; the cane-sugar mills are largely concentrated in Louisiana, and the sugar refineries are located principally in or near New York City, Boston, Philadelphia, New Orleans, and San Francisco, where the imported raw sugar can be delivered most conveniently and economically.

Comparative summary, 1914 and 1909.—Table 1 summarizes the statistics of the sugar industry, as a whole, and of the three branches separately for 1914 and 1909, and gives percentages of increase.

Table 1	TOTAL.		BEET SUGAR.		CANE SUGAR.		SUGAR REFINING.		PER CENT OF INCREASE, ¹ 1909-1914.			
	1914	1909	1914	1909	1914	1909	1914	1909	Total	Beet.	Cane.	Re- fined.
Number of establishments.....	259	291	60	58	181	214	18	19	-11.0	.....	-15.4	.....
Persons engaged.....	26,739	24,047	9,634	8,389	4,544	5,312	12,561	10,345	11.2	14.8	-14.5	21.4
Proprietors and firm members.....	181	205	1	1	172	198	8	6	-11.7	.....	-13.1	.....
Salaried employees.....	3,876	3,112	1,638	1,184	740	988	1,300	940	18.1	38.2	-25.1	38.3
Wage earners (average number).....	22,882	20,730	7,997	7,204	3,632	4,127	11,253	9,399	10.4	11.0	-12.0	19.7
Primary horsepower.....	239,617	217,805	76,705	67,202	113,246	122,189	49,666	38,414	10.0	34.1	-7.3	29.3
Capital.....	\$315,677,669	\$282,795,499	\$142,181,326	\$129,628,938	\$32,996,524	\$37,925,770	\$140,499,819	\$115,240,791	11.6	9.7	-13.0	21.9
Salaries and wages.....	\$21,242,971	\$16,453,198	\$8,864,853	\$6,577,900	\$2,052,521	\$2,600,172	\$10,325,597	\$7,275,126	29.1	34.8	-21.1	41.9
Salaries.....	\$5,252,014	\$4,161,030	\$2,258,649	\$1,769,454	\$491,145	\$737,421	\$2,502,220	\$1,654,155	26.2	27.6	-33.4	51.3
Wages.....	\$15,990,957	\$12,292,168	\$6,606,204	\$4,808,446	\$1,561,376	\$1,862,751	\$7,823,377	\$5,620,971	30.1	37.4	-16.2	39.2
Paid for contract work.....	\$279,915	\$44,659	\$247,657	\$1,591	\$11,988	\$43,068	\$20,270					
Rent and taxes (including internal revenue).....	\$2,014,111	\$1,520,143	\$807,223	\$634,111	\$263,820	\$315,631	\$943,068	\$570,401	32.5	27.3	-16.4	65.3
Cost of materials.....	\$321,442,937	\$274,847,974	\$41,399,361	\$27,265,170	\$15,958,218	\$21,294,844	\$264,085,358	\$226,287,960	17.0	51.8	-25.1	16.7
Value of products.....	\$373,639,298	\$327,371,780	\$62,605,210	\$48,122,383	\$21,635,373	\$30,620,738	\$299,398,715	\$248,828,659	14.1	30.1	-29.3	16.4
Value added by manufacture (value of products less cost of materials).....	\$52,196,361	\$52,523,806	\$21,205,849	\$20,857,213	\$5,677,155	\$9,325,894	\$25,313,357	\$22,340,699	-0.6	1.7	-39.1	13.3
Sugar:												
Tons (2,000 pounds).....	4,341,408	(²)	743,473	501,682	264,801	326,858	3,333,134	(²)	.....	48.2	-19.0	.....
Value.....	\$363,034,123	(²)	\$58,590,466	\$45,937,629	\$18,947,683	\$26,095,673	\$285,495,974	(²)	.....	27.5	-27.4	.....

¹ A minus sign (-) denotes decrease.

² The quantity and value for sugar refining were not reported for 1909, therefore the total can not be given.

During the period 1909-1914 the number of establishments engaged in the production of cane sugar decreased by about 15 per cent, but only slight changes took place in the number of establishments in the other two branches of the industry.

The total number of persons engaged in the three branches in 1914 was 26,739, representing an increase of 11.2 per cent as compared with the number in 1909.

Of this total, 36 per cent were reported by the beet-sugar factories, 17 per cent by the cane mills, and 47 per cent by the refineries, as against 35 per cent, 22 per cent, and 43 per cent, respectively, in 1909. Of the number of persons engaged in the industry as a whole in 1914, 3.9 per cent were proprietors and officials, 10.5 per cent were clerks or other subordinate salaried employees, and 85.6 per cent were wage

earners. The great majority—25,850, or 96.7 per cent of the total—were males.

The manufacture of beet and cane sugar being seasonal in character, a considerably greater number of wage earners are employed during certain months than during others. For the industry as a whole, the maximum employment in 1914 (43,438) occurred in November; for the beet-sugar branch (20,353) in October; for the manufacture of cane sugar (14,635) in November; and for sugar refining (12,792) in June.

The total primary horsepower reported for the combined industry increased by 10 per cent between 1909 and 1914. Marked gains are shown for each branch of the industry except the manufacture of cane sugar.

The total value of products for the combined industry increased by 14.1 per cent during the five-year period covered by the table. This increase was confined to the beet-sugar and sugar-refining branches, the value of the output of cane sugar having declined by 29.3 per cent during this period. The increase for beet sugar was greater relatively but less in actual amount than that for sugar refining.

Of the total output of sugar in 1914, the refineries produced 76.8 per cent of the quantity and 78.6 per cent of the value; the beet-sugar factories, 17.1 per cent and 16.2 per cent, respectively; and the cane-

sugar mills, 6.1 per cent and 5.2 per cent, respectively. As already explained, these figures include some duplications, due to the use of a portion of the products of the cane-sugar mills as materials for the refineries.

The world's production of sugar during the year 1914 amounted to 41,972,098,560 pounds, of which 19,810,830,520 pounds, or 47.2 per cent, represented beet sugar. Of the world's production, 20.7 per cent was manufactured in continental United States.¹

Imports and exports of sugar.¹—During the fiscal year ended June 30, 1914, the United States imported 2,367,708 pounds of beet sugar, valued at \$70,829, and 4,944,815,410 pounds of cane sugar, valued at \$98,811,960. In addition, there were brought from Porto Rico 641,252,527 pounds of sugar, from Hawaii 1,114,750,702 pounds, and from the Philippine Islands 116,749,211 pounds, or a total of 1,872,752,440 pounds. During the same year there were exported 50,895,726 pounds of refined domestic sugar, valued at \$1,839,983, 724,570 pounds of foreign beet sugar valued at \$21,034, and 20,255,122 pounds of foreign cane sugar, valued at \$464,119. In addition there were shipped to Hawaii 1,593,670 pounds of refined sugar, to Porto Rico 16,855,067 pounds, and to Alaska 6,171,752 pounds. More than 95 per cent of the imported raw sugar comes from Cuba and 25,371,574 pounds of the Hawaiian shipment was refined sugar.

BEET-SUGAR INDUSTRY.

Comparative summary.—Table 2 summarizes the statistics of the manufacture of beet sugar in the United States, as reported at the censuses of 1914, 1909, and 1904, and gives separate figures for 1914 and 1909 with reference to three groups of states. It is impossible to publish statistics for the industry by states without disclosing the operations of individual establishments. For this reason, and also to permit a more detailed presentation of the statistics, the states have been arranged in three groups. By this means not only have disclosures of individual operations been avoided, but factories operated to a greater or less extent under similar conditions have been brought under the same heading. For the most part, in the states in Groups I and II—comprising California, Colorado, Idaho, Kansas, Montana, Nebraska, and Utah—the growers depend upon irrigation, and as a rule planting and harvesting are earlier in these states than in those constituting Group III—Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin—in which the beets are grown on nonirrigated land.

For both 1914 and 1909, in certain cases two or more factories located in the same state and operated by the same company were covered by a single report. The data thus obtained were tabulated as pertaining to a single establishment. The number of separate factories reported as in operation in each year was 65.

The manufacture of beet sugar is an industry of comparative recent development in the United States. At the census of 1869 two establishments with products valued at \$119,720 were reported under the heading "sugar and molasses, beet and grape," the greater part of their output being beet sugar. For 1879, the first year for which the manufacture of beet sugar was shown separately, four establishments returned products to the value of \$282,572. For 1889 only two establishments were reported, and therefore no statistics could be published without disclosing the operations of individual concerns. During the next decade this branch of the sugar industry increased rapidly, and 30 establishments, with products valued at \$7,323,857, were reported at the census of 1899. Still greater development is shown for the next decade, 58 establishments having been reported for 1909, with products valued at \$48,122,383, representing an increase of 557.1 per cent during the ten years. For the period 1909–1914 the increase amounted to \$14,482,827, or 30.1 per cent. The products of this branch of the industry consisted almost entirely of sugar, the subsidiary products, molasses and beet pulp, being of relatively little importance.

During the five-year period 1909 to 1914 the quantity of beets used increased by 42.2 per cent, and the quantity of sugar manufactured, by 48.2 per cent.

¹ Statistical Abstract, Bureau of Foreign and Domestic Commerce, and Commerce and Navigation of the United States, 1914.

Table 2

	BEET SUGAR.										PER CENT OF INCREASE. ¹						
	United States.			Group I. ²		Group II. ³		Group III. ⁴			United States.		Grp. I.	Grp. II.	Grp. III.	1904-1914	1909-1914
	1914	1909	1904	1914	1909	1914	1909	1914	1909	1914	1904-1914	1909-1914	1904-1914	1909-1914	1904-1914		
	1914	1909	1904	1914	1909	1914	1909	1914	1909	1914	1904-1914	1909-1914	1904-1914	1909-1914	1904-1914		
Number of establishments ⁵ ..	60	58	51	12	12	28	20	20	20	20	17.6	3.4	13.7	.....	7.7	.....	.....
Persons engaged.....	9,034	8,389	4,726	2,366	2,173	4,660	3,888	2,698	2,328	2,328	103.9	14.8	77.5	8.9	19.9	12.0	.....
Proprietors and firm members.....	1	1	1	1	1	1	1	1	1	1	.....	.....	.....	.....	.....	.....	.....
Salaried employees.....	1,636	1,184	703	357	205	667	493	612	426	426	114.4	38.2	55.2	34.7	35.3	43.7	.....
Wage earners (average number).....	7,997	7,204	3,963	2,009	1,968	3,992	3,395	1,996	1,901	1,901	101.8	11.0	81.8	5.3	17.6	5.0	.....
Primary horsepower.....	76,705	57,202	35,490	22,868	13,551	34,281	30,149	19,556	13,502	13,502	116.1	34.1	61.2	68.8	13.7	44.8	.....
Capital.....	\$142,181,320	\$129,628,938	\$55,923,459	\$37,819,188	\$37,629,771	\$67,296,034	\$64,236,216	\$37,066,099	\$27,762,951	\$27,762,951	154.2	9.7	131.8	0.5	4.8	33.5	.....
Salaries and wages.....	\$8,864,853	\$9,577,900	\$3,491,338	\$2,236,443	\$1,750,621	\$4,582,379	\$3,115,763	\$2,046,031	\$1,711,516	\$1,711,516	153.9	34.8	88.4	27.8	47.1	19.5	.....
Salaries.....	\$2,258,649	\$1,769,454	\$1,004,636	\$501,239	\$453,666	\$1,020,577	\$709,307	\$676,833	\$546,481	\$546,481	124.8	27.6	76.1	23.7	32.7	23.8	.....
Wages.....	\$6,606,204	\$7,808,446	\$2,486,702	\$1,675,204	\$1,296,955	\$3,561,802	\$2,346,456	\$1,369,198	\$1,165,035	\$1,165,035	165.7	37.4	93.4	29.2	51.8	17.5	.....
Paid for contract work.....	\$247,657	\$1,591	\$13,255	\$6,167	.....	\$200,537	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rent and taxes (including internal revenue).....	\$807,223	\$634,111	\$243,443	\$290,631	\$122,628	\$337,629	\$364,417	\$178,963	\$147,066	\$147,066	231.6	27.3	160.5	137.0	-7.4	21.7	.....
Cost of materials.....	\$41,399,361	\$27,265,170	\$14,486,876	\$10,065,289	\$9,198,751	\$22,897,674	\$13,241,895	\$8,496,393	\$7,824,524	\$7,824,524	183.8	51.8	88.2	62.4	72.7	8.2	.....
Value of products.....	\$62,605,210	\$48,122,383	\$24,393,794	\$15,528,666	\$12,499,279	\$32,113,424	\$22,651,903	\$14,903,120	\$12,971,201	\$12,971,201	156.6	30.1	97.3	26.2	60.9	19.2	.....
Value added by manufacture (value of products less cost of materials).....	\$21,205,849	\$20,857,213	\$9,906,918	\$5,463,377	\$6,300,528	\$9,245,745	\$9,410,006	\$6,496,727	\$5,146,677	\$5,146,677	114.1	1.7	110.5	-13.3	-1.8	26.2	.....
Beets used (tons 2,000 pounds).....	5,639,103	3,968,356	2,176,417	1,138,264	901,855	3,276,230	2,036,437	1,224,609	1,027,064	1,027,064	159.2	42.2	82.3	26.2	60.9	19.2	.....
Sugar produced:																	
Tons (2,000 pounds).....	743,473	501,682	253,921	176,431	131,605	414,954	241,333	152,068	128,744	128,744	192.8	48.2	97.6	34.1	71.9	18.1	.....
Value.....	\$58,590,466	\$45,937,029	\$23,924,602	\$14,344,035	\$12,216,616	\$30,744,567	\$21,631,709	\$13,501,864	\$12,089,304	\$12,089,304	144.9	27.5	92.0	17.4	42.1	11.7	.....

¹ A minus sign (—) denotes decrease.² Group I embraces: California, 12 establishments in 1914; and Arizona 1, California 9, Oregon 1, and Washington 1, in 1909.³ Group II embraces: Colorado 13 establishments, Idaho 4, Kansas 1, Montana 1, Nebraska 2, and Utah 7, in 1914; and Colorado 15, Idaho 3, Kansas 1, Montana 1, Nebraska 1, and Utah 5, in 1909.⁴ Group III embraces: Illinois 1 establishment, Indiana 1, Iowa 1, Michigan 10, Minnesota 1, Ohio 3, and Wisconsin 3, in 1914; and Illinois 1, Iowa 1, Michigan 11, Minnesota 1, New York 1, Ohio 1, and Wisconsin 4, in 1909.⁵ The number of separate factories in operation in both 1914 and 1909 was 65. In each year, however, in some cases, two or more factories operated in the same state by one owner were reported as one establishment.

While increases are shown for the industry in all three groups of states, by far the greatest development is shown for Group II, which comprises four of the mountain states and Kansas and Nebraska. For 1914 the factories in this group reported 48.4 per cent of the total number of persons engaged in the industry, and 55.8 per cent and 52.5 per cent, respectively, of the total quantity and value of sugar manufactured.

Capacity of establishments.—The growth of the industry is further illustrated by Table 3, which shows, for 1914, 1909, and 1904, the total number of factories in each state and their total daily slicing capacity.

Table 3

STATE.	BEET SUGAR.					
	1914 ¹		1909 ²		1904 ¹	
	Number of factories.	Daily capacity (tons of beets).	Number of factories.	Daily capacity (tons of beets).	Number of factories.	Daily capacity (tons of beets).
United States.....	77	68,875	68	52,750	51	35,900
Arizona.....	1	600	1	800	.....	.....
California.....	13	12,925	11	11,700	5	7,300
Colorado.....	17	17,900	16	12,200	9	6,350
Idaho.....	5	3,650	4	3,750	3	1,800
Illinois.....	1	450	1	350	.....	.....
Indiana.....	1	800	.....	500	.....	.....
Iowa.....	1	500	1	1,200	.....	.....
Kansas.....	1	900	1	1,200	19	12,550
Michigan.....	16	14,550	17	11,900	1	400
Minnesota.....	1	800	1	600	.....	.....
Montana.....	1	1,850	1	1,200	.....	.....
Nebraska.....	2	1,900	1	350	3	1,200
Nevada.....	1	600	.....	.....	.....	.....
New York.....	.....	.....	1	600	1	600
Ohio.....	5	3,500	1	400	1	400
Oregon.....	.....	.....	1	400	1	350
Utah.....	7	5,050	5	4,000	4	2,850
Washington.....	.....	.....	1	500	1	400
Wisconsin.....	4	2,800	4	2,300	3	1,700

¹ Willett and Gray's Weekly Statistical Sugar Trade Journal.² The American Sugar Industry and Beet Sugar Gazette, January, 1910.³ Includes 11 idle factories and 1 run for cane experimentation.⁴ Includes 3 idle factories.⁵ Includes 1 idle factory.

During the decade 1904-1914 the total daily slicing capacity of the beet-sugar factories increased by 91.9 per cent. Based on the capacity reported for 1914, the leading three states in the manufacture of beet sugar are Colorado, Michigan, and California, in the order in which named. These states reported a combined slicing capacity equal to 65.9 per cent of the total for the United States.

Persons engaged in the industry.—Table 4 shows, for 1914 and 1909, the number of persons engaged in the beet-sugar branch of the industry, distributed by sex, the average number of wage earners being distributed also by age. The sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

Table 4

CLASS.	Census year.	PERSONS ENGAGED IN THE BEET-SUGAR INDUSTRY.					
		Total.	Male.	Female.	Per cent of total.		
					Male.	Female.	
All classes.....	1914	9,634	9,458	176	98.2	1.8	.....
	1909	8,389	8,281	108	98.7	1.3	.....
Proprietors and officials.....	1914	377	377	.....	100.0	.....	.....
	1909	320	320	.....	100.0	.....	.....
Proprietors and firm members.....	1914	1	1	.....	100.0	.....	.....
	1909	1	1	.....	100.0	.....	.....
Salaried officers of corporations.....	1914	98	98	.....	100.0	.....	.....
	1909	91	91	.....	100.0	.....	.....
Superintendents and managers.....	1914	278	278	.....	100.0	.....	.....
	1909	228	228	.....	100.0	.....	.....
Clerks and other subordinate salaried employees.....	1914	1,260	1,121	139	89.0	11.0	.....
	1909	865	772	93	89.2	10.8	.....
Wage earners (average number).....	1914	7,997	7,900	97	99.5	0.5	.....
	1909	7,204	7,189	15	99.8	0.2	.....
16 years of age and over.....	1914	7,995	7,958	37	99.5	0.5	.....
	1909	7,198	7,183	15	99.8	0.2	.....
Under 16 years of age.....	1914	2	2	.....	100.0	.....	.....
	1909	6	6	.....	100.0	.....	.....

The average number of persons engaged in the beet-sugar industry increased by 1,245, or 14.8 per cent, between 1909 and 1914. Of the total for 1914, 3.9 per cent were proprietors and officials, 13.1 per cent were clerks and other subordinate salaried employees, and 83 per cent were wage earners. The corresponding percentages for 1909 were 3.8, 10.3, and 85.9. Of the few females employed, the great majority were in the clerical class. Of the total number of wage earners but 2 were under 16 years of age in 1914, as against 6 in 1909.

Wage earners employed, by months.—Table 5 gives the number of wage earners employed in the manufacture of beet sugar on the 15th, or nearest representative day, of each month during the years 1914 and 1909.

MONTH.	WAGE EARNERS IN THE BEET-SUGAR INDUSTRY.			
	Number.		Per cent of maximum.	
	1914	1909	1914	1909
January.....	6,593	6,465	32.4	38.5
February.....	2,527	2,206	12.4	13.1
March.....	2,537	2,750	12.5	16.4
April.....	3,164	3,057	15.5	18.2
May.....	3,980	3,432	19.6	20.4
June.....	4,045	3,943	19.9	23.5
July.....	4,470	4,505	22.0	26.8
August.....	7,180	6,045	35.3	36.0
September.....	9,066	7,215	44.5	42.9
October.....	20,353	15,815	100.0	94.1
November.....	18,686	16,807	91.8	100.0
December.....	13,354	14,233	65.6	84.7

The active period in the beet-sugar branch of the industry—termed the “campaign”—begins in August in California, but in the other states it does not com-

mence until October and covers the last three months of the year. During this period the factories are, as a rule, operated continuously. The maximum number of wage earners in 1914 were employed during October and in 1909 during November. The minimum number in both years was reported for February and represented about one-eighth of the maximum.

Power.—The increase in primary horsepower between 1909 and 1914 amounted to 19,503, or 34.1 per cent. (See Table 1.) The use of rented power has materially increased since 1909, for which year 2,090 horsepower of this character, representing 3.7 per cent of the total primary power, was reported. In 1914 the amount of such power had increased to 5,075 horsepower, or 6.6 per cent of the total, the percentage of increase being 142.8. The use of electric motors run by current generated in the same establishment has also increased greatly. For 1914, 12,796 horsepower of this character was reported, as against 6,778 for 1909, the rate of increase being 88.8 per cent.

Fuel.—Closely related to the subject of power is that of fuel. The total cost of fuel and rented power in 1914, as shown by Table 8, was \$2,726,525. The fuel consumed included 757,782 tons of coal and coke and 803,698 barrels of oil (including gasoline), almost the entire quantity of the latter being reported from California.

Materials and products.—Table 6 shows, for 1914, 1909, and 1904, the acreage, quantity, and quality of beets treated for the manufacture of sugar. Separate figures are also given, for 1904 and 1909, with reference to the three groups of states defined in the footnotes in Table 2.

Table 6

	BEET SUGAR.									
	United States.			Group I.		Group II.		Group III.		
	1914	1909	1904	1914	1909	1914	1909	1914	1909	
Total acreage of beets planted.....	532,421	415,964	240,757	118,126	85,094	276,931	198,816	137,364	131,054	
By proprietors.....	28,266	29,459	20,484	23,903	21,511	4,101	6,699	262	1,249	
By tenants.....	15,397	18,168	20,223	11,874	10,362	3,523	7,804	.....	.....
By independent growers.....	488,758	368,339	200,050	82,349	54,221	269,307	184,313	137,102	129,805	
Total quantity of beets treated (tons of 2,000 pounds).....	5,639,103	3,965,356	2,175,417	1,138,264	901,855	3,276,230	2,036,437	1,224,609	1,027,064	
Grown by proprietors.....	214,923	266,768	169,839	172,704	206,858	40,212	52,158	2,007	7,762	
Grown by tenants.....	135,537	163,843	210,247	98,468	101,885	37,069	61,958	.....	.....
Grown by independent growers.....	5,288,643	3,534,745	1,795,331	867,092	593,112	3,198,949	1,922,321	1,222,602	1,019,312	
Quality of beets used:										
Average percentage of sucrose.....	16.1	16.1	15.0	18.2	18.0	15.7	15.1	15.4	16.6	
Average coefficient of purity.....	84.0	84.1	83.2	83.0	84.8	84.2	83.1	84.2	85.8	

The acreage of beets planted for factory use in the United States increased by 121.1 per cent during the ten-year period 1904–1914. Of the acreage in 1914, 5.3 per cent was planted directly by the factories, 2.9 per cent by tenants of factory owners, and 91.8 per cent by independent growers. Of the total quantity of beets treated during the same year, 3.8 per cent was grown directly by the companies, 2.4 per cent by tenants, and 93.8 per cent by independent growers.

In order to assure a proper supply of beets for the operation of their factories, some manufacturers purchase or lease farm land and either cultivate it themselves or sublet it for beet growing. The proportion of the total acreage of sugar beets controlled by the manufacturers has decreased considerably since 1904, and during the period 1909–1914 there was not only a relative but an actual decrease in the acreage thus controlled.

The average yield of beets per acre for the entire United States increased from 9.5 tons in 1909 to 10.6 tons in 1914. The highest average per acre in the later year, 11.8, was reported from the states in Group II, and the lowest, 8.9, from those in Group III. In each of the three groups there were increases in both acreage and quantity of beets grown; and in Groups II and III there were increases in the yield per acre, but in Group I the yield per acre decreased.

The quality of the sugar beet is indicated by the "percentage of sucrose" and the "coefficient of purity." Both these terms relate to the sugar content, the former representing the ratio between the weight of the sugar and that of the whole beet, and the latter the ratio between the weight of the sugar and that of the solid content of the beet. In the operation of beet-sugar factories the coefficient of purity of the beets used is of great importance, as upon this depends to a considerable extent the cost of the separation of the sugar from the other solids.

For the United States as a whole, increases are shown for the period 1904-1909 in both the average percentage of sucrose and the average coefficient of purity, but during the following five-year period there was substantially no change. For 1914 the establishments in Group I reported the highest percentage of sucrose but the lowest coefficient of purity. There

was little difference in the quality of the beets as reported by the establishments in Groups II and III for the same year. The total sugar content of the 5,639,103 tons of beets used in 1914, based on the average of 16.1 per cent, was 907,896 tons; but the quantity of sugar manufactured, according to the returns, was only 743,473 tons, or 81.9 per cent of the theoretically possible total. This percentage, however, is higher than the corresponding one for 1909—78.6—from which it will be seen that the actual sugar loss was appreciably less in the later year than in the earlier, probably because of improvements in the processes of manufacture.

Methods of payment for beets purchased.—Two methods are employed in determining the price to be paid for the beets purchased by the sugar factories. One is the payment of a fixed price per ton, with a proviso, in some instances, that the beets must average not less than a certain percentage of sucrose. The other is the sliding scale, where a stipulated price is paid for beets analyzing a specified percentage of sucrose, with an added amount for every additional per cent or a fraction of a per cent of sucrose.

Table 7 shows the quantity and value of the various products manufactured in the United States in 1914, 1909, and 1904, and in the three groups of states separately in 1914 and 1909.

Table 7

PRODUCT.	BEET SUGAR.								
	United States.			Group I.		Group II.		Group III.	
	1914	1909	1904	1914	1909	1914	1909	1914	1909
Total value.....	\$62,805,210	\$48,122,383	\$24,393,794	\$15,528,666	\$12,499,279	\$32,113,424	\$22,651,903	\$14,963,120	\$12,971,201
Sugar:									
Tons (2,000 pounds).....	743,473	501,682	253,922	176,431	131,605	414,954	241,332	152,088	128,745
Value.....	\$58,590,466	\$45,937,629	\$23,924,602	\$14,344,035	\$12,216,616	\$30,744,567	\$21,631,709	\$13,501,984	\$12,089,304
Granulated—									
Tons.....	739,233	496,807	245,309	175,558	131,218	412,019	237,040	151,656	127,949
Value.....	\$58,351,324	\$45,645,810	\$23,493,373	\$14,200,575	\$12,197,526	\$30,592,263	\$21,420,196	\$13,468,486	\$12,028,088
Raw—									
Tons.....	4,240	4,875	5,613	873	387	2,935	3,692	432	796
Value.....	\$239,142	\$291,819	\$431,229	\$53,460	\$19,090	\$152,304	\$211,513	\$33,378	\$61,216
Average pounds of sugar per ton of beets.	264	253	233	310	292	223	237	248	251
Molasses:									
Gallons.....	26,461,291	20,812,747	9,609,542	4,618,243	2,715,776	16,138,518	11,563,537	5,704,530	6,533,434
Value.....	\$1,536,192	\$1,129,905	\$221,097	\$260,327	\$95,790	\$964,206	\$583,130	\$411,669	\$450,985
Pulp, value.....	\$2,094,863	\$795,900	\$202,070	\$540,775	\$36,723	\$504,651	\$305,202	\$1,049,437	\$423,975
Dried, value.....	\$1,510,759	(1)	(1)	\$413,836	(1)	\$45,572	(1)	\$1,046,351	(1)
Moist, value.....	\$584,104	(1)	(1)	\$121,939	(1)	\$459,079	(1)	\$3,086	(1)
All other products, value.....	\$383,689	\$258,949	\$46,025	\$383,529	\$120,150	.....	\$131,862	\$160	\$6,967

1 Not reported separately.

Of the total production of beet sugar in the United States in 1914, the states of Group I reported 23.7 per cent; those of Group II, 55.8 per cent; and those of Group III, 20.5 per cent. The average quantity of sugar obtained per ton of beets in the United States appears to have increased during the decade covered by the table. Molasses and pulp, the most important subsidiary products of the industry, are used largely in the preparation of stock feed.

It is very desirable to secure beets containing a high a percentage of sucrose as possible, and to attain

this end the manufacturers are cooperating with the growers by directing their attention to improved methods of planting and cultivation.

The principal statistics for the manufacture of beet sugar during the year 1914 are presented, by groups of states, in Table 8.

With reference to the statistics of capital, attention is called to the probability that the returns relating to this item made by a number of establishments included the value of land used for the production of beets.

Table 8

	BEET SUGAR.					BEET SUGAR.			
	United States.	Group I.	Group II.	Group III.		United States.	Group I.	Group II.	Group III.
Number of establishments.....	60	12	28	20	Contract work.....	\$247,657	\$6,107	\$200,537	\$40,953
Persons engaged in the industry.....	9,634	2,360	4,060	2,608	Rent and taxes.....	\$807,223	\$200,631	\$337,029	\$178,963
Proprietors and firm members.....	1	1	1	1	Rent of factory.....	\$70,000	\$70,000	.....	.....
Salaried officers, superintendents, and managers.....	376	67	192	117	Taxes (including internal revenue).....	\$737,223	\$220,631	\$337,029	\$178,963
Clerks, etc.....	1,260	290	475	495	Cost of materials.....	\$41,399,361	\$10,065,289	\$22,867,079	\$8,466,363
Male.....	1,121	265	423	428	Principal materials.....	\$38,672,836	\$9,377,801	\$21,494,608	\$7,800,367
Female.....	139	25	47	67	Fuel and rent of power.....	\$2,726,525	\$687,428	\$1,373,071	\$604,026
Wage earners:					Value of products.....	\$62,605,210	\$15,528,666	\$32,113,424	\$14,963,120
Average number.....	7,997	2,009	3,992	1,996	Value added by manufacture.....	\$21,205,849	\$5,463,377	\$9,245,745	\$9,496,727
Number, 15th day of month—maximum month and number.....	Oct., 20,353	Oct., 4,167	Oct., 9,338	Oct., 6,948	Power:				
Minimum month and number.....	Feb., 2,527	Feb., 704	Feb., 1,348	Feb., 385	Primary horsepower.....	76,705	22,868	34,281	19,556
Wage earners, Dec. 15, or nearest representative day.....	19,518	4,261	8,758	6,499	Steam engines and turbines.....	70,507	18,072	33,105	19,330
16 years of age and over.....	19,513	4,257	8,757	6,499	Internal-combustion engines.....	928	680	52	196
Male.....	19,423	4,220	8,727	6,470	Water wheels and motors.....	195	.....	185	10
Female.....	90	31	30	29	Electric (rented).....	5,075	4,110	939	20
Under 16 years of age.....	5	4	1	.....	Electric horsepower generated by establishments reporting.....	12,796	6,323	4,111	2,362
Male.....	5	4	1	.....	Fuel:				
Female.....	.....	.....	.....	.....	Coal (tons of 2,000 pounds).....	719,928	15	474,345	245,568
Capital.....	\$142,181,326	\$37,819,188	\$67,296,039	\$37,066,099	Coke (tons of 2,000 pounds).....	37,854	8,790	20,980	8,084
Salaries and wages.....	\$3,804,853	\$2,230,443	\$4,582,379	\$2,046,031	Oil, including gasoline (barrels).....	803,698	764,684	38,812	202
Officials.....	\$1,073,215	\$200,433	\$534,753	\$248,029	Gas (1,000 cubic feet).....	4,789	4,789	.....	.....
Clerks, etc.....	\$1,185,434	\$270,806	\$485,824	\$428,804					
Wage earners.....	\$9,606,204	\$1,673,204	\$3,561,802	\$1,369,198					

CANE-SUGAR INDUSTRY.

Magnitude of the industry.—At censuses prior to that of 1909 the data for the manufacture of cane sugar and for sugar refining were combined, for which reason the statistics for the earlier years are not comparable with those for 1909 or 1914. At the beginning of the section following relating to sugar refining, there is given, in text form, a brief summary of the earlier statistics as to wage earners and value of products of establishments engaged in sugar refining and in the manufacture of sugar and molasses.

The statistics for the manufacture of cane sugar are summarized in Table 1. It will be seen that during the period 1909–1914 more or less pronounced decreases took place in all the items covered by the table, that in value added by manufacture, 39.1 per cent, being relatively the greatest. The products of the cane-sugar mills in 1914 were valued at \$21,635,373 and represented 5.8 per cent of the total value of products for the entire sugar industry.

All but 10 of the establishments reported for 1909 and all but 13 of those for 1914 were located in Louisiana.

Persons engaged in the industry.—Table 9 shows, for 1914 and 1909, the number of persons engaged in the industry, distributed by sex, the average number of wage earners being distributed also by age. The sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

Of the total number of persons engaged in the industry in 1914, 9.9 per cent were proprietors and officials, 10.2 per cent were clerks and other subordinate salaried employees, and 79.9 per cent were wage earners. The corresponding percentages for 1909 were 11.1, 11.2, and 77.7. Only 121 females, or 2.7 per cent of the total, were reported for 1914. Of these, a

little more than two-thirds were wage earners. The number of female proprietors and officials declined greatly during the five-year period. The number of wage earners under 16 years of age nearly doubled between 1909 and 1914, and in the later year represented about 1 per cent of the total wage earners.

Table 9

Table 9	CLASS.	Cen- sus year.	PERSONS ENGAGED IN THE CANE- SUGAR INDUSTRY.				
			Total.	Male.	Fe- male.	Per cent of total.	
						Male.	Fe- male.
	All classes	1914 1909	4,544 5,313	4,423 5,213	121 100	97.3 98.1	2.7 1.9
	Proprietors and officials	1914 1909	450 590	432 544	18 46	96.0 92.2	4.0 7.8
	Proprietors and firm members	1914 1909	172 198	154 154	18 44	89.5 77.8	10.5 22.2
	Salaried officers of corporations	1914 1909	72 105	72 103	..... 2	100.0 98.1	..... 1.9
	Superintendents and managers	1914 1909	206 287	206 287	..... .....	100.0 100.0	..........
	Clerks and other subordinate salaried employees	1914 1909	462 596	442 567	20 29	95.7 95.1	4.3 4.9
	Wage earners (average number)	1914 1909	3,632 4,127	3,549 4,102	83 25	97.7 99.4	2.3 0.6
	16 years of age and over	1914 1909	3,588 4,104	3,509 4,080	79 24	97.8 99.4	2.2 0.6
	Under 16 years of age	1914 1909	44 23	40 22	4 1	90.9 95.7	9.1 4.3

Wage earners employed, by months.—Table 10 shows, for 1914 and 1909, the number of wage earners employed on the 15th, or nearest representative day, of each month, together with the percentage which the number reported for each month forms of the greatest number reported for any month of the same year.

Harvesting and crushing the cane usually begin in October, are at their height in November, and continue through December and to a limited extent into January. The maximum number of wage earners

was reported for November for both 1914 and 1909. The minimum employment occurred in March in the later year and in February in the earlier, and represented 4.6 per cent and 3.5 per cent, respectively, of the corresponding maximum.

Table 10

MONTH.	WAGE EARNERS IN THE CANE-SUGAR INDUSTRY.			
	Number.		Per cent of maximum.	
	1914	1909	1914	1909
January.....	1,453	1,598	9.9	10.1
February.....	893	559	6.1	3.5
March.....	673	715	4.6	4.5
April.....	701	798	4.8	5.1
May.....	723	874	4.9	5.5
June.....	857	1,040	5.9	6.6
July.....	1,062	1,122	7.3	7.1
August.....	1,017	920	6.9	5.8
September.....	1,338	1,322	9.1	8.4
October.....	7,253	9,693	49.6	61.5
November.....	14,635	15,761	100.0	100.0
December.....	12,979	15,115	88.7	95.9

It is necessary to crush the cane promptly after harvesting in order to prevent deterioration, and for this reason, as well as on account of the shortness of the season, most of the mills are operated continuously during the "campaign." A common practice is to have two sets of workmen alternate in shifts of six hours each. For 1914, 2,931 wage earners, or 80.7 per cent of the total, and for 1909, 3,920, or 95 per cent, were returned as working in establishments where the prevailing hours were 72 or more per week.

Character of ownership.—Table 11 presents statistics in respect to the character of ownership, or legal organization, of establishments in the cane-sugar branch of the industry, for 1914 and 1909.

Table 11

CHARACTER OF OWNERSHIP.	Census year.	CANE SUGAR.			
		Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
All classes.....	1914 1909	181 214	3,632 4,127	\$21,635,373 30,620,738	\$5,677,155 9,325,894
Individuals.....	1914 1909	55 73	868 949	3,710,938 6,701,121	959,732 1,827,335
Corporations.....	1914 1909	91 98	2,237 2,568	15,080,209 19,360,776	4,068,096 6,068,217
All others.....	1914 1909	35 43	527 610	2,844,226 4,558,841	649,327 1,339,342
Per cent distribution:					
Individuals.....	1914 1909	30.4 34.1	23.9 23.0	17.2 21.9	16.9 20.7
Corporations.....	1914 1909	50.3 45.8	61.6 62.2	69.7 63.2	71.7 65.1
All others.....	1914 1909	19.3 20.1	14.5 14.8	13.1 14.9	11.4 14.3

The establishments operated by corporations in 1914, although representing only half the total number, reported 61.6 per cent of the average number of wage earners and 69.7 per cent of the value of products.

Statistics in detail.—Table 12 presents detailed statistics for establishments grouped according to the value of their products, for 1914 and 1909.

Table 12

	TOTAL FOR ALL ESTABLISHMENTS.		ESTABLISHMENTS WITH PRODUCTS VALUED AT—							
	1914	1909	Less than \$50,000.		\$50,000 to \$100,000.		\$100,000 and over.			
	1914	1909	1914	1909	1914	1909	1914	1909	1914	1909
Number of establishments.....	1,181	1,214	63	66	40	57	78	91		
Persons engaged in the industry.....	4,544	5,313	534	627	925	996	3,085	3,750		
Proprietors and firm members.....	172	198	82	74	38	51	52	73		
Salaries officers, superintendents, and managers.....	278	392	39	68	72	107	167	217		
Clerks and other subordinate salaried employees.....	462	596	59	61	48	93	355	442		
Male.....	442	567	56	60	48	89	338	418		
Female.....	20	29	3	1		4	17	24		
Wage earners—										
Average number.....	3,632	4,127	355	424	719	685	2,558	3,018		
Number, 15th day of month—										
Maximum month and number.....	Nov. 14, 635	Nov. 15, 761	Nov. 1, 844	Nov. 2, 101	Nov. 2, 808	Nov. 2, 711	Nov. 9, 983	Nov. 10, 949		
Minimum month and number.....	Mar. 673	Feb. 559	May 2, 170	Feb. 12	Apr. 122	Feb. 30	Mar. 514	Feb. 517		
Wage earners Dec. 15 or nearest representative day.....	15,054	15,369	2,052	2,052	2,802	2,730	10,857	10,857		
16 years of age and over.....	14,873	15,283	2,156	2,032	2,757	2,708	9,960	10,543		
Male.....	14,546	15,102	2,148	2,018	2,662	2,701	9,736	10,473		
Female.....	327	91	8	14	95	7	224	70		
Under 16 years of age.....	181	86	14	20	45	2	122	44		
Male.....	165	83	14	20	30	22	121	41		
Female.....	16	3			15	1	1	3		
Capital.....	\$32,906,524	\$37,925,770	\$3,180,014	\$3,907,869	\$5,355,433	\$6,712,393	\$24,461,077	\$27,305,506		
Salaries and wages.....	\$2,062,521	\$2,600,172	\$161,381	\$200,876	\$328,167	\$419,005	\$1,562,973	\$1,980,291		
Officials.....	\$361,603	\$523,598	\$16,994	\$33,001	\$60,924	\$100,525	\$283,685	\$399,072		
Clerks.....	\$129,542	\$213,823	\$9,781	\$9,282	\$11,705	\$108,056	\$180,219	\$180,219		
Wage earners.....	\$1,561,376	\$1,862,751	\$124,606	\$159,639	\$235,538	\$294,158	\$1,171,222	\$1,408,954		
Contract work.....	\$11,988	\$43,068	\$100	\$11,501	\$310	\$18,525	\$11,578	\$12,642		
Rent and taxes.....	\$263,820	\$315,631	\$26,222	\$27,434	\$45,142	\$63,532	\$192,456	\$224,665		
Rent of factory.....	\$30,087	\$33,244	\$450				\$29,637			
Taxes (including internal revenue and corporation income).....	\$233,733	\$282,387	\$25,772	\$27,434	\$45,142	\$63,532	\$162,819	\$191,421		
Cost of materials.....	\$15,958,218	\$21,294,844	\$1,118,563	\$1,444,671	\$2,304,586	\$3,203,218	\$12,535,069	\$16,646,955		
Principal materials.....	\$14,806,608	\$19,860,463	\$1,003,941	\$1,288,469	\$2,087,654	\$2,926,671	\$11,715,013	\$15,645,323		
Fuel and rent of power.....	\$1,151,610	\$1,434,381	\$114,622	\$156,202	\$216,932	\$276,547	\$820,056	\$1,001,632		
Value of products.....	\$21,635,373	\$30,620,738	\$1,369,350	\$1,889,295	\$2,987,303	\$4,456,643	\$17,278,600	\$24,274,800		
Value added by manufacture.....	\$5,677,155	\$9,325,894	\$250,787	\$444,624	\$682,777	\$1,253,425	\$4,743,591	\$7,627,845		
Power:										
Primary horsepower.....	113,246	122,180	13,282	17,074	21,813	24,390	78,151	80,725		
Steam engines and turbines.....	112,776	121,439	13,167	16,674	21,735	24,355	77,574	80,410		
Internal-combustion engines.....	438	380	83	30	78	35	277	315		
Electric (rented).....	32	370	32	370						
Electric horsepower generated by establishments reporting.....	2,737	3,625	106	234	537	295	2,004	3,066		

¹ Includes for 1914, Arizona, 1 establishment; Florida, 5; Louisiana, 168; Mississippi, 2; South Carolina, 1; and Texas, 4. For 1909, Illinois, 1 establishment; Louisiana, 204; Maryland, 1; Minnesota, 2; and Texas, 6.

The number of establishments reported for each of the three groups for which figures are given in the table decreased between 1909 and 1914, the greatest decrease, both absolutely and proportionally, being that shown for the second group. In each year the establishments with products valued at more than \$100,000, operated for the most part by corporations, represented about 43 per cent of the total number of establishments. These large establishments, however, reported 70.4 per cent of the total wage earners and 79.9 per cent of the total value of products for 1914, as against 73.1 per cent and 79.3 per cent, respectively, for 1909.

The output of one factory in 1909 was valued at more than \$1,000,000, but no establishment reported so great a value of products at the census of 1914.

Practically all the primary power used in this branch of the industry—99.6 per cent in 1914 and 99.4 per cent in 1909—is derived from steam. The use of rented electric power, reported only for the establishments in the first group, decreased by more than 90 per cent between the two census years.

The fuel consumed for the generation of power and for other purposes by the establishments engaged in the manufacture of cane sugar in 1914 included 32,898 tons of coal, 15 tons of coke, and 840,179 barrels of oil and gasoline. In addition, large quantities of the pulp of the sugar cane, from which the juice had been extracted, was used for fuel.

Materials used.—Table 13 presents statistics concerning the quantity and cost of cane crushed and the cost of other materials for 1914 and 1909.

Of the total quantity of cane crushed, 40.8 per cent in 1914, as against 57.1 per cent in 1909, was grown on

plantations controlled by the mill operators. The average cost per ton of the cane thus grown, as reported for 1914, was \$3.43, while that of cane purchased was \$3.68. Of the total cost of materials used the cane crushed represented 84 per cent in 1914, as compared with 80.8 per cent in 1909.

Table 13 MATERIALS. (Quantities, tons of 2,000 pounds.)	CANE SUGAR.	
	1914	1909
Total cost.....	\$15,958,218	\$21,294,844
Cane crushed:		
Tons.....	3,754,820	4,520,419
Cost.....	\$13,408,689	\$17,211,752
Grown on plantations controlled by mill owners—		
Tons.....	1,532,575	2,581,323
Cost.....	\$5,259,933	\$9,614,410
Purchased—		
Tons.....	2,166,477	1,906,951
Cost.....	\$7,969,882	\$7,481,604
Treated on shares or contract—		
Tons.....	55,768	32,145
Cost.....	\$178,874	\$116,738
Cost of fuel and rent of power.....	\$1,151,610	\$1,434,381
All other materials, cost.....	\$1,397,919	\$2,648,711

Products.—Table 14 gives, for 1914 and 1909, the quantities and values of the various products of the cane-sugar mills.

The average value per pound of the sugar reported was 3.6 cents in 1914, as against 4 cents in 1909. The average value per gallon of the molasses made, from which more or less of the sugar content had been extracted, was 9.8 cents in 1914 as against 11.6 cents in 1909. For the sirup, from which practically no sugar had been extracted, the average price per gallon was 25.2 cents during the two census years.

Table 14 PRODUCTS. (Quantities, tons of 2,000 pounds.)	CANE SUGAR.		PRODUCTS. (Quantities, tons of 2,000 pounds.)	CANE SUGAR.	
	1914	1909		1914	1909
Total value.....	\$21,635,373	\$30,620,733	Sugar—Continued.		
Sugar:			Sugar other than brown—Continued.		
Tons.....	264,801	326,858	Clarified—		
Value.....	\$18,947,683	\$26,095,673	Tons.....	91,075	(1)
Brown or open kettle—			Value.....	\$6,742,266	
Tons.....	5,309	3,678	Raw—		
Value.....	\$361,410	\$301,386	Tons.....	114,823	(1)
Sugar other than brown—			Value.....	\$7,615,147	
Tons.....	259,492	323,180	Molasses:		
Value.....	\$18,686,273	\$25,794,287	Gallons.....	20,675,260	24,587,581
Refined—			Value.....	\$2,021,517	\$2,845,559
Tons.....	53,594	(1)	Sirup:		
Value.....	\$4,228,860		Gallons.....	2,420,633	1,449,860
			Value.....	\$609,696	\$365,632
			All other products, value.....	\$56,477	\$1,313,874

¹ Not reported separately.

² Products of establishments making no sugar included in "all other" in 1909.

CANE-SUGAR REFINING.

This branch of the industry comprises establishments which are engaged primarily in the refining of cane sugar. At censuses prior to that of 1909 the data for sugar refining were combined with those of the manufacture of cane sugar, for which reason the statistics for the earlier years are not comparable with those for 1909 or 1914. Following is a brief summary of the earlier statistics as to wage earners and value of products for establishments engaged in sugar refining and in the manufacture of sugar and molasses.

For 1849, under the heading "sugar refiners," 23 establishments were reported, with 1,656 wage earners and products valued at \$9,898,800; for 1859, 39, with 3,484 wage earners and products valued at \$42,143,234; for 1869, 59, with 4,597 wage earners and products valued at \$108,941,911; for 1879, 49, with 5,857 wage earners and products valued at \$155,484,915; and for 1889, 393, with 7,529 wage earners and products valued at \$123,118,259. In addition, for 1859, 2 establishments were classified under the heading "sugar

and molasses" and 2 under the heading "sugar evaporators," the former having 5 wage earners and products valued at \$2,280, and the latter, 27 wage earners and products valued at \$31,000; and for 1869, 713 establishments were reported under the heading "sugar and molasses, raw cane," employing 21,299 wage earners and having products valued at \$10,383,368.

For 1899, under the general classification "sugar and molasses, refining," there were reported 657 establishments, with products valued at \$239,711,011; and for 1904, 344 establishments, with products valued at \$277,285,449. These figures, however, are not strictly comparable with those for 1889 and former years. Two refineries reported for 1909 were idle in 1914, and one new establishment reported for 1914.

Table 15 gives detailed statistics relating to the United States as a whole, for the sugar-refining branch of the industry for 1914 and 1909. Separate figures for the states can not be given without disclosing the operations of individual establishments.

Table 15

	TOTAL FOR ALL ESTABLISHMENTS.		ESTABLISHMENTS WITH PRODUCTS VALUED AT—							
			Less than \$10,000,000.		\$10,000,000 to \$20,000,000.		\$20,000,000 or over.			
	1914	1909	1914	1909	1914	1909	1914	1909	1914	1909
Number of establishments.....	118	119	7	7	5	5	6	4	6	4
Persons engaged in the industry.....	12,561	10,345	2,265	2,399	3,371	3,309	6,925	4,337	6,925	4,337
Proprietors and firm members.....	8	6	5	6	3	3	3	3	3	3
Salaried officers, superintendents, and managers.....	203	193	62	50	58	56	83	57	83	57
Clerks and other subordinate salaried employees.....	1,097	747	188	175	212	272	607	299	607	299
Male.....	1,011	695	177	158	187	259	547	278	547	278
Female.....	86	52	11	17	25	14	50	21	50	21
Wage earners—										
Average number.....	11,253	9,399	2,010	2,168	3,101	3,450	6,142	3,781	6,142	3,781
Number 15th day of month—										
Maximum month and number.....	June 12,792	July 9,652	July 2,419	Sept. 2,395	June 3,485	July 3,916	June 6,897	Apr. 4,678	June 6,897	Apr. 4,678
Minimum month and number.....	Jan. 9,112	Jan. 7,935	Jan. 1,418	Jan. 1,696	Jan. 2,446	Feb. 3,017	Jan. 5,248	Jan. 3,161	Jan. 5,248	Jan. 3,161
Wage earners Dec. 15 or most representative day.....	11,390	9,765	2,001	2,312	3,108	3,853	6,281	3,690	6,281	3,690
16 years of age and over.....	11,362	9,719	1,989	2,290	3,108	3,836	6,265	3,598	6,265	3,598
Male.....	10,860	9,434	1,945	2,220	2,992	3,738	5,923	3,466	5,923	3,466
Female.....	502	285	44	60	116	98	342	127	342	127
Under 16 years of age.....	28	46	12	22	17	17	16	7	16	7
Male.....	20	42	4	22	17	17	16	3	16	3
Female.....	8	4	8	4	—	—	—	4	—	4
Capital.....	\$140,499,819	\$115,240,791	\$20,729,390	\$15,600,336	\$41,479,518	\$46,565,941	\$78,290,911	\$53,074,514	\$78,290,911	\$53,074,514
Salaries and wages.....	\$10,825,597	\$7,275,126	\$1,942,919	\$1,334,221	\$2,962,550	\$2,996,906	\$5,420,128	\$2,943,999	\$5,420,128	\$2,943,999
Officials.....	\$1,308,973	\$820,755	\$303,901	\$129,111	\$372,341	\$408,174	\$632,731	\$283,479	\$632,731	\$283,479
Clerks, etc.....	\$1,189,247	\$833,400	\$223,106	\$175,984	\$257,206	\$331,724	\$712,935	\$325,092	\$712,935	\$325,092
Wage earners.....	\$7,327,377	\$5,620,971	\$1,415,912	\$1,029,126	\$2,333,008	\$2,257,008	\$4,074,462	\$2,334,507	\$4,074,462	\$2,334,507
Contract work.....	\$22,270	\$3,825	\$12,055	\$3,825	\$8,215	\$8,215	\$117,014	\$117,014	\$8,215	\$8,215
Rent and taxes.....	\$943,068	\$570,401	\$377,616	\$102,866	\$196,821	\$350,521	\$369,631	\$117,014	\$369,631	\$117,014
Rent of factory.....	\$276,696	\$198,550	\$261,246	\$23,550	\$3,400	\$175,000	\$12,050	\$12,050	\$3,400	\$175,000
Taxes (including internal revenue).....	\$666,372	\$371,851	\$116,370	\$79,316	\$192,421	\$175,521	\$357,581	\$104,964	\$357,581	\$104,964
Cost of materials.....	\$264,085,358	\$226,287,960	\$37,585,055	\$26,862,708	\$73,467,884	\$90,695,237	\$153,062,419	\$108,730,015	\$153,062,419	\$108,730,015
Principal materials.....	\$260,100,198	\$223,421,589	\$36,825,214	\$26,410,414	\$72,387,292	\$89,495,345	\$150,887,692	\$107,515,590	\$150,887,692	\$107,515,590
Fuel and rent of power.....	\$3,985,160	\$2,866,371	\$759,841	\$452,294	\$1,080,592	\$1,199,892	\$2,144,727	\$1,214,425	\$1,199,892	\$1,214,425
Value of products.....	\$289,398,715	\$248,628,659	\$42,946,917	\$30,292,242	\$80,130,560	\$101,110,232	\$160,321,258	\$117,228,185	\$160,321,258	\$117,228,185
Value added by manufacture.....	\$25,313,357	\$22,340,669	\$5,361,862	\$3,429,534	\$6,662,676	\$10,414,995	\$13,285,819	\$8,496,179	\$13,285,819	\$8,496,179
Power:										
Primary horsepower.....	49,666	38,414	6,290	7,922	10,035	18,088	23,341	12,404	23,341	12,404
Steam engines and turbines.....	45,407	37,453	5,399	7,862	7,100	17,241	32,918	12,350	32,918	12,350
Internal-combustion engines.....	69	15	69	15	—	—	—	—	—	—
Electric (rented).....	4,190	946	832	45	2,935	847	423	54	2,935	847
Electric horsepower generated by establishments reporting.....	19,826	13,789	1,011	4,586	4,098	3,768	14,717	5,435	4,098	3,768

¹ Includes for 1914: California, 2 establishments; Louisiana, 3; Massachusetts, 2; New Jersey, 2; New York, 5; Pennsylvania, 3; and Texas, 1. In 1909: California, 2 establishments; Louisiana, 5; Massachusetts, 2; New Jersey, 2; New York, 5; Pennsylvania, 2; and Texas, 1.

Table 1 presents a comparison of the major items shown in the above table with those for the other two branches of the industry, together with percentages of increase or decrease for the period 1909-1914.

The bulk of the raw sugar used by the refineries is imported from Cuba and in addition considerable

amounts are brought from Porto Rico, Hawaii, and the Philippines.

Except for a decrease of one in the number of establishments, Table 15 shows, for the sugar-refining branch of the industry, taken as a whole, considerable increases in all the times for which figures are given.

These increases, however, are confined in large measure to the third group of establishments—those with products valued at \$20,000,000 or over—which comprised six establishments in 1914, as against four in 1909. For the second group, which comprised only five establishments in 1914, as against eight in 1909, decreases in practically all items are shown; and for the first, in which the number of establishments remained the same, losses appear in salaried officers, wage earners, and horsepower.

The majority of the sugar refineries are very extensive establishments. The six with products valued at \$20,000,000 or over in 1914 reported 55.1 per cent of the total number of persons engaged in sugar refining and 57.5 per cent of the total value of products. The average value of products for all establishments in 1914 was \$16,077,706 and the average number of wage earners per establishment was 625. Of the 18 establishments reported for that year, 15 were under corporate ownership.

The primary horsepower is derived mainly from steam, but the use of rented electric power increased greatly between 1909 and 1914, representing 8.4 per cent of the total in the later year. The bulk of the electric current employed, however, is generated in the establishment in which it is used.

Coal formed the greater part of the fuel in the sugar-refining branch of the industry in both 1909 and 1914. In the later year 875,882 tons (of 2,000 pounds) of bituminous coal and 451,310 tons (of 2,240 pounds) of anthracite were burned, as compared with 542,148 tons and 511,640 tons, respectively, in 1909. The consumption of oil and gasoline (largely fuel oil) amounted to 748,533 barrels in 1914, as against 578,633 barrels in 1909.

Table 16 shows, for 1914 and 1909, the number of persons engaged in sugar refining, distributed by sex, the average number of wage earners being distributed also by age. The sex and age classifications of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

Of the total number of persons engaged in this branch of the industry in 1914, 1.7 per cent were proprietors and officials, 8.7 per cent were clerks and other subordinate salaried employees, and 89.6 per cent were wage earners. The great majority of all classes were males. The figures for 1914 show an increase in every item as compared with those for 1909, except in the number of wage earners under 16 years of age, which class in the later year constituted only one-fourth of 1 per cent of the total wage earners.

Table 16		PERSONS ENGAGED IN THE SUGAR-REFINING INDUSTRY.								PERSONS ENGAGED IN THE SUGAR-REFINING INDUSTRY.							
		CLASS.	Cen- sus year.	Total.	Male.	Fe- male.	Per cent of total.			CLASS.	Cen- sus year.	Total.	Male.	Fe- male.	Per cent of total.		
							Male.								Fe- male.	Male.	Fe- male.
All classes.....	1914 1909	12,561 10,345	11,969 10,015	592 330	95.3 96.8	4.7 3.2	Clerks and other subordinate sala- ried employees.....	1914 1909	1,097 747	1,011 695	86 52	92.2 93.0	7.8 7.0				
Proprietors and officials.....	1914 1909	211 199	209 199	2	99.1 100.0	0.9	Wage earners (average number).....	1914 1909	11,253 9,399	10,749 9,121	504 278	95.5 97.0	4.5 3.0				
Proprietors and firm members....	1914 1909	8 6	6 6	2	75.0 100.0	25.0	16 years of age and over.....	1914 1909	11,225 9,354	10,729 9,080	496 274	95.6 97.1	4.4 2.9				
Salaried officers of corporations...	1914 1909	24 35	24 35	.....	100.0 100.0	.....	Under 16 years of age.....	1914 1909	28 45	20 41	8 4	71.4 91.1	28.6 8.9		
Superintendents and managers...	1914 1909	179 158	179 158	.....	100.0 100.0	.....										

Table 17 gives the number of wage earners employed in the sugar refineries on the 15th (or nearest representative day) of each month, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

The maximum employment of wage earners in 1914 was reported for June, and in 1909 for July. The

minimum, reported for January for each year, represented 71.2 per cent of the maximum in 1914 and 79.7 per cent in 1909. That the fluctuation of employment was materially greater in 1914 than in 1909 is further brought out by the fact that for only four months in the later year, as against eight in the earlier is 95 per cent or more of the maximum number of wage earners shown.

MONTH.	WAGE EARNERS IN THE SUGAR-REFINING INDUSTRY.			
	Number.		Per cent of maximum.	
	1914	1909	1914	1909
January.....	9,112	7,935	71.2	79.7
February.....	9,930	8,653	77.6	86.9
March.....	11,722	9,890	91.6	99.4
April.....	11,983	9,652	93.7	97.0
May.....	12,229	9,492	95.6	95.4
June.....	12,792	9,926	100.0	99.7
July.....	12,471	9,952	97.5	100.0
August.....	12,397	9,613	96.9	96.6
September.....	11,593	9,680	90.6	97.3
October.....	10,390	9,341	81.2	93.9
November.....	10,117	9,588	79.1	96.3
December.....	10,300	9,048	80.5	90.9

More than three-fourths (76 per cent) of the total wage earners in the industry in 1914 were employed in refineries where the prevailing hours were 60 or more per week. Of the 18 establishments reporting for that year, 15 employed more than 250 wage earners, of which 9 employed more than 500 each but less than 1,000, and one employed over 1,000.

Table 18 gives, for all establishments combined and for establishments grouped according to value of products, statistics as to quantity and cost of materials used and quantity and value of products made in 1914.

Of the total consumption of raw sugar in 1914, 58.3 per cent was reported for refineries whose products were valued at more than \$20,000,000, 27.1 per cent for those having products valued at \$10,000,000 or more, but less than \$20,000,000, and 14.6 per cent for those with products valued at less than \$10,000,000.

The corresponding percentages which the quantity of refined sugar produced by these groups of establishments represented of the total output for that year are 58.2, 27.0, and 14.8, respectively.

The value of the refined sugar produced varied but little at the different refineries, ranging from 4.1 to 4.6 cents per pound. The value of the molasses produced depends on the quantity of the sugar content extracted. Some of the mills extract practically the entire amount of available sugar content, whereas others extract only a part of it. The price per gallon ranged from 3.2 cents upward. The average value per gallon for the sirup, from which no sugar had been extracted, was 25.4 cents.

Table 18

SUGAR REFINING: 1914.

MATERIALS AND PRODUCTS: (QUANTITIES, TONS OF 2,000 POUNDS).	Total for all establish- ments.	Establishments with products valued at—		
		Less than \$10,000,000.	\$10,000,000 to \$20,000,000.	\$20,000,000 or more.
MATERIALS.				
Total cost.....	\$264,085,358	\$37,585,055	\$73,467,884	\$153,032,419
Raw sugar:				
Tons.....	3,560,479	520,194	963,462	2,076,823
Cost.....	\$247,086,355	\$34,385,229	\$68,749,042	\$143,952,084
All other, cost.....	\$16,999,003	\$3,199,826	\$4,718,842	\$9,080,335
PRODUCTS.				
Total value.....	\$289,398,715	\$42,946,917	\$80,130,560	\$166,321,238
Refined sugar:				
Tons.....	3,333,134	492,232	900,830	1,940,072
Value.....	\$285,495,974	\$41,486,555	\$79,300,314	\$164,706,105
Molasses and sirup:				
Gallons.....	35,802,995	12,784,979	6,682,391	16,335,625
Value.....	\$3,284,278	\$1,111,160	\$816,306	\$1,356,812
All other products, value..	\$818,463	\$346,202	\$13,940	\$258,321

MANUFACTURED ICE.

By JOHN G. HAWES.

SUMMARY AND ANALYSIS.

Summary for the industry.—The statistics for this industry represent the manufacture of ice for sale. Data for cold-storage and refrigeration plants were not obtained at this census, although in cases where the manufacture of ice and the cold-storage or refrigeration business were carried on in the same establishment and it was impossible to segregate the latter from the former, the figures given cover the entire operations of the establishment.

The manufacture of ice was first reported as an industry in the Southern states, where the need of artificial ice was most urgent. The report for 1869 shows for this section of the country 4 establishments, with 97 wage earners and with products valued

at \$258,250. By 1879 the artificial-ice industry had grown to 35 establishments, with 447 wage earners and with products valued at \$544,763. In that year the industry was still confined to the South with the exception of 5 establishments in California and 1 in Missouri, but since that time it has spread rapidly. In 1889 it comprised 222 establishments, with 2,826 wage earners and with products valued at \$4,900,983. In 1899 only 13 states reported no ice-manufacturing plants; in 1904, 9; in 1909, 7; and in 1914, 4, namely, Maine, New Hampshire, Vermont, and North Dakota.

Table 1 summarizes the statistics for the industry for each census from 1899 to 1914, and gives percentages of increase for the several five-year periods.

Table 1	NUMBER OR AMOUNT.				PER CENT OF INCREASE. ¹		
	1914	1909	1904	1899	1909-1914	1904-1909	1899-1904
Number of establishments.....	2,543	2,004	1,320	775	26.9	51.8	73.3
Persons engaged.....	29,788	21,107	13,179	8,858	41.1	60.2	48.8
Proprietors and firm members.....	1,355	1,066	746	447	27.1	42.9	60.9
Salaried employees.....	5,420	3,927	2,332	1,531	28.0	68.4	52.3
Wage earners (average number).....	23,011	16,114	10,101	6,880	42.8	59.5	46.8
Primary horsepower.....	461,988	317,789	191,660	100,421	45.4	65.8	98.9
Capital.....	\$174,308,511	\$118,641,538	\$66,602,001	\$38,019,507	48.9	78.2	75.2
Salaries and wages.....	\$20,546,202	\$13,646,881	\$7,550,273	\$4,629,076	50.6	80.7	66.1
Salaries.....	\$5,705,611	\$3,887,911	\$2,001,111	\$1,226,331	47.5	63.3	63.2
Wages.....	\$14,840,591	\$9,778,970	\$5,549,162	\$3,402,745	51.8	78.2	68.1
Paid for contract work.....	\$138,090	\$82,288	\$22,442	\$20,044	65.4	268.7	-2.6
Rent and taxes (including internal revenue).....	\$2,177,983	\$1,254,590	\$712,332	\$361,238	73.0	76.1	97.2
Cost of materials.....	\$17,755,004	\$11,817,498	\$6,011,325	\$3,812,323	56.9	83.3	81.5
Value of products.....	\$60,386,267	\$42,953,065	\$23,790,045	\$13,750,978	40.6	80.6	72.6
Value added by manufacture (value of products less cost of materials).....	\$42,631,263	\$31,135,567	\$17,778,720	\$10,468,585	34.8	77.9	69.8
Ice manufactured, tons of 2,000 pounds ²	21,043,063	14,230,208	8,014,137	4,294,439	47.9	77.6	.....
In the ice-manufacturing industry.....	18,324,091	12,647,948	7,190,448	(³)	44.9	75.7	67.6
As a subsidiary product by other industries ³	2,718,372	1,582,259	814,689	(⁴)	71.8	94.2	.....

¹ A minus sign (—) denotes decrease.

² Exclusive of internal revenue.

³ The figures for number of establishments, persons engaged, value of products, etc., given in this table relate only to the ice-manufacturing industry proper.

⁴ Figures not available.

During the period 1909-1914 the percentages of increase in the principal items of expense, namely, wages and cost of materials—51.8 and 56.9, respectively—were considerably greater than in value of products, 40.6, which was less than the percentage of increase in quantity of output in the ice-manufacturing industry proper, 44.9. Since the cost of water—the chief element of the finished product—is very small, the total cost of "materials" (which term covers fuel, rent of power and heat, mill supplies, etc.) is relatively low, being equal to but 26.3 per cent of the total value of products in 1909 and to 29.4 per cent in 1914.

With the exception of the unimportant item, amount paid for contract work, which showed a slight decrease between 1899 and 1904, the percentages of increase between 1909 and 1914 were smaller in all cases than

the corresponding ones for either of the preceding 5-year periods.

Summary, by states.—Table 2 shows, for 1914, by states, the number of establishments, average number of wage earners, value of products, and value added by manufacture, together with the per cent distribution of the last three items in 1914 and the percentages of increase in these items for the three 5-year periods between 1899 and 1914. The states are given in the order of their importance as measured by value of products in 1914.

Texas reported the greatest value of products for 1914, but in average number of wage earners and value added by manufacture was outranked by Pennsylvania, which led in all three respects in 1909. The greatest number of establishments in each year was reported by Texas. The percentages of increase in

average number of wage earners for Texas and Pennsylvania was nearly the same, but in value of products and value added by manufacture the former state shows much the greater increase. New York and California ranked third and fourth in value of prod-

ucts in both 1909 and 1914. Michigan and Nebraska showed remarkably high percentages of increase in both value of products and number of wage earners. Utah and Iowa also reported very large increases in value of products.

Table 2

STATE.	ICE-MANUFACTURING INDUSTRY: 1914.										PER CENT OF INCREASE. ¹								
	Number of establishments.	Wage earners.			Value of products.			Value added by manufacture.			Wage earners (average number).			Value of products.			Value added by manufacture.		
		Average number.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904
United States.	2,543	23,011	100.0	.....	\$60,386,267	100.0	.....	\$42,631,263	100.0	.....	42.8	59.5	46.8	40.6	80.6	72.6	34.8	77.9	69.8
Texas.....	255	1,926	8.4	2	5,328,302	8.8	1	3,668,772	8.6	2	34.0	65.4	40.6	38.6	84.5	70.0	33.3	82.1	74.9
Pennsylvania.....	189	2,124	9.2	1	5,194,493	8.6	2	3,741,459	8.8	1	32.3	29.9	32.9	49.1	64.3	44.0	4.0	61.7	35.1
New York.....	111	1,407	6.1	3	4,896,778	8.1	3	3,229,311	7.6	3	25.2	86.4	89.0	28.6	117.7	66.4	16.8	135.8	49.9
California.....	95	1,139	4.9	6	3,587,334	5.9	4	2,661,260	6.2	4	71.0	60.5	118.4	53.9	78.3	155.8	50.6	75.3	157.8
Illinois.....	128	1,312	5.7	4	3,888,862	5.6	5	2,383,440	5.6	5	63.2	65.8	-22.3	75.8	105.1	-5.1	60.4	114.4	-15.2
Ohio.....	132	1,277	5.5	5	3,134,302	5.2	6	2,258,393	5.3	6	43.2	71.5	73.9	38.1	86.5	108.7	32.4	84.4	107.9
Missouri.....	117	1,059	4.6	7	3,106,895	5.1	7	2,065,730	4.8	7	39.2	75.8	55.2	49.1	84.4	76.3	45.8	93.8	76.1
Florida.....	92	760	3.3	13	2,202,769	3.6	8	1,586,118	3.7	8	64.9	56.3	24.5	82.5	76.5	59.8	92.8	60.4	71.6
Georgia.....	74	890	3.9	10	2,064,984	3.4	9	1,453,498	3.4	9	80.2	23.8	59.0	77.0	35.5	87.7	63.8	35.0	90.4
Indiana.....	106	928	4.0	9	2,029,250	3.4	10	1,391,336	3.3	10	64.5	44.0	14.0	54.8	75.3	37.5	41.3	67.8	38.8
Louisiana.....	76	782	3.4	11	1,962,071	3.2	11	1,285,965	3.0	14	23.5	38.2	58.5	30.7	36.5	92.6	28.3	30.6	99.2
Virginia.....	87	714	3.1	14	1,795,645	3.0	12	1,294,639	3.0	12	50.3	37.3	68.8	57.1	79.7	48.6	47.9	88.6	44.1
Kansas.....	101	634	2.8	15	1,794,797	3.0	13	1,287,357	3.0	13	6.9	150.2	107.9	22.9	149.6	198.5	15.1	161.8	217.1
Tennessee.....	70	927	4.0	8	1,762,193	2.9	14	1,357,205	3.2	11	19.0	103.9	-0.8	33.1	93.6	27.1	30.1	85.9	31.1
Oklahoma.....	97	528	2.3	18	1,604,146	2.7	15	1,202,018	2.8	15	17.6	127.9	.....	26.0	141.1	371.4	24.5	137.3	.....
Maryland.....	62	532	2.3	17	1,562,983	2.6	16	1,141,422	2.7	16	15	49.9	40.3	52.9	40.0	103.3	57.9	31.3	100.0
New Jersey.....	71	621	2.7	16	1,556,361	2.6	17	1,029,036	2.4	18	9	36.2	70.1	4.0	131.0	65.3	-7.4	133.4	67.6
Kentucky.....	93	766	3.3	12	1,471,866	2.4	18	1,031,870	2.4	17	16	62.3	36.8	29.7	61.4	54.8	24.7	46.8	51.6
Alabama.....	55	478	2.1	20	1,201,106	2.0	19	930,169	2.2	19	21	39.4	41.2	54.7	46.1	119.8	61.6	40.5	114.7
North Carolina.....	61	519	2.3	19	1,125,894	1.9	20	784,117	1.8	20	22	63.2	35.3	46.0	70.8	57.7	63.5	49.2	98.1
Arkansas.....	65	424	1.8	23	1,114,551	1.8	21	769,189	1.8	21	20	20.5	34.9	35.9	68.0	127.0	25.4	60.5	126.0
Mississippi.....	58	476	2.1	21	1,045,940	1.7	22	719,037	1.7	22	19	39.6	24.5	20.7	43.6	120.1	10.0	42.6	119.1
South Carolina.....	36	368	1.6	24	818,223	1.4	23	552,688	1.3	25	27	68.8	96.4	88.9	77.5	110.3	81.7	79.9	.....
Arizona.....	27	203	0.9	27	807,278	1.3	24	535,921	1.3	26	26	73.5	.....	61.1	93.4	94.7	49.8	77.6	.....
Michigan.....	11	443	1.9	22	764,966	1.3	25	636,620	1.5	23	31	409.2	.....	284.4	.....	.....	301.3	.....	.....
West Virginia.....	47	364	1.6	25	765,922	1.3	26	570,961	1.3	24	25	56.2	32.4	58.8	34.8	196.6	56.5	25.0	.....
Colorado.....	32	231	1.0	26	654,429	1.1	27	472,501	1.1	27	23	-8.0	81.9	14.8	51.6	84.3	6.5	45.6	76.3
Iowa.....	34	192	0.8	28	578,924	1.0	28	376,597	0.9	29	29	27.2	.....	99.7	.....	.....	66.9	.....	.....
Washington.....	32	159	0.7	29	551,429	0.9	29	407,739	1.0	28	24	-2.5	.....	-1.3	129.6	133.7	-2.1	106.4	.....
Oregon.....	27	106	0.5	32	375,607	0.6	31	257,273	0.6	31	30	53.6	.....	46.2	18.4	87.1	41.8	2.8	.....
Nebraska.....	18	102	0.4	33	330,467	0.5	32	209,737	0.5	33	36	240.0	.....	164.0	.....	.....	147.1	.....	.....
Delaware.....	18	151	0.7	30	293,660	0.5	33	235,054	0.6	32	34	112.7	.....	92.2	7.7	.....	126.8	-10.3	.....
New Mexico.....	15	76	0.3	35	231,710	0.4	34	179,630	0.4	35	35	.....	.....	61.1	.....	.....	76.0	.....	.....
Utah.....	10	38	0.2	38	227,572	0.4	35	184,155	0.4	34	37	.....	.....	145.2	.....	.....	187.0	.....	.....
Connecticut.....	5	86	0.4	34	191,824	0.3	36	128,754	0.3	36	33	.....	.....	20.8	31.4	.....	11.2	.....	.....
Massachusetts.....	6	57	0.2	36	180,212	0.3	37	104,363	0.2	37	32	.....	.....	-11.2	.....	.....	-23.1	.....	.....
Idaho.....	10	42	0.2	37	112,440	0.2	38	89,117	0.2	38	38	.....	.....	72.3	.....	.....	.....	.....	.....
Nevada.....	3	9	.....	39	42,717	0.1	40	22,039	0.1	40	40	.....	.....	.....	.....	.....	.....	.....	.....
All other States.....	17	163	0.7	.....	537,405	0.9	.....	396,476	0.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

¹ Percentages are based on figures in Table 17; a minus sign (-) denotes decrease. Percentages are omitted where base is less than 100 for wage earners or less than \$100,000 for value of products or value added by manufacture, or where comparable figures can not be given.

Persons engaged in the industry.—Table 3 shows the number of persons engaged in the ice industry in 1914 and 1909, classified according to occupational status and sex, and in the case of wage earners according to age, together with the percentages of males and females in each class.

The total number of persons reported as engaged in this industry in 1914 was 29,786, of whom 77.2 per cent were wage earners, 14.7 per cent were proprietors and officials, and 8.1 per cent were clerks and other subordinate salaried employees.

The only occupational class for which any considerable proportion of females is shown is that of clerks and other subordinate salaried employees, of whom 21.9 per cent in 1914 were females, as against 18 per cent in 1909. A few women—78, or 5.8 per cent of the total—are shown as proprietors and firm members in 1914.

Table 3

CLASS.	Census year.	PERSONS ENGAGED IN THE INDUSTRY.				
		Total.	Male.	Female.	Per cent of total.	
					Male.	Female.
All classes.....	1914 1909	29,786 21,107	29,094 20,726	692 381	97.7 98.2	2.3 1.8
Proprietors and officials.....	1914 1909	4,377 3,405	4,278 3,333	99 72	97.7 97.9	2.3 2.1
Proprietors and firm members..	1914 1909	1,355 1,060	1,277 1,007	78 59	94.2 94.5	5.8 5.5
Salaried officers of corporations..	1914 1909	1,254 971	1,234 959	20 12	98.4 98.8	1.6 1.2
Superintendents and managers..	1914 1909	1,768 1,368	1,767 1,367	1 1	99.9 99.9	0.1 0.1
Clerks and other subordinate salaried employees.	1914 1909	2,398 1,588	1,872 1,302	526 286	78.1 82.0	21.9 18.0
Wage earners (average number)...	1914 1909	23,011 16,114	22,944 16,091	67 23	99.7 99.0	0.3 0.1
16 years of age and over.....	1914 1909	22,792 15,995	22,725 15,972	67 23	99.7 99.9	0.3 0.1
Under 16 years of age.....	1914 1909	219 119	219 119	..... .....	100.0 100.0	..........

The number of wage earners shown in this table is an average computed in the manner described in the "Explanation of terms." A very small proportion of the wage earners in this industry are boys under 16 years of age, and this proportion was practically the same in 1914 as in 1909.

Table 4 gives per cent distributions and percentages of increase based on Table 3.

Table 4

¹ Percentages are omitted where base is less than 100.

No very marked changes in the proportions which the several classes represented of the total took place between 1909 and 1914. For proprietors and officials and for each of the three subgroups under this head the numbers reported represented somewhat smaller proportions, and clerks and other subordinate salaried employees and wage earners represented slightly

greater proportions, of the total in the later year than in the earlier.

The greatest percentage of increase shown by any class comprising 100 or more persons in 1909 appears for male wage earners under 16 years of age; and the greatest percentage of increase for any class of considerable size is that for clerks and other subordinate salaried employees.

Wage earners employed, by months.—Table 5 shows the total number of wage earners in the industry employed on the 15th of each month, or nearest representative day, for the years 1914 and 1909, and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

MONTH.	WAGE EARNERS IN THE INDUSTRY.					
	Number. ¹			Per cent of maximum.		
	1914	1909	1904	1914	1909	1904
January.....	15,144	9,847	5,620	46.6	42.1	27.8
February.....	15,660	10,008	5,832	48.1	44.9	29.2
March.....	17,128	11,863	6,906	52.7	51.6	44.4
April.....	21,023	14,929	9,330	64.6	65.3	62.7
May.....	25,686	18,061	11,918	78.0	79.0	80.1
June.....	30,825	20,875	13,909	94.8	91.3	95.5
July.....	32,526	22,872	14,883	100.0	100.0	100.0
August.....	32,104	22,644	14,854	98.7	99.0	99.8
September.....	28,896	21,403	13,876	88.8	93.6	95.2
October.....	23,065	16,526	10,774	70.9	72.3	72.4
November.....	18,085	13,020	7,377	55.6	56.9	49.6
December.....	15,990	11,292	5,933	49.2	49.8	39.9

¹ The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

Table 6 presents these statistics for 1914 for the United States as a whole and for each of the 19 states in which 500 or more wage earners were employed.

Table 6	WAGE EARNERS: 1914.														Per cent minimum is of maximum.
	[Month of maximum employment for each industry is indicated by boldface figures and that of minimum by italic figures.]														
	STATE.	Average number employed during the year.	Number employed on 15th day of the month or nearest representative day.												
January.			February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
United States.....	23,011	15,144	15,660	17,128	21,023	25,686	30,825	32,526	32,104	28,896	23,065	18,085	15,990	46.6	
California.....	1,139	880	906	1,096	1,223	1,183	1,256	1,292	1,328	1,269	1,208	1,073	954	66.3	
Florida.....	760	702	695	709	755	798	835	861	829	796	734	707	702	80.7	
Georgia.....	890	608	617	692	875	1,063	1,212	1,250	1,170	1,059	821	681	634	48.5	
Illinois.....	1,312	901	1,021	968	1,155	1,417	1,808	1,874	1,823	1,565	1,283	1,014	915	48.1	
Indiana.....	926	591	618	699	821	1,004	1,272	1,383	1,374	1,143	906	713	582	42.5	
Kansas.....	634	304	327	368	570	750	921	1,004	1,019	918	639	447	341	29.8	
Kentucky.....	766	395	436	469	700	867	1,101	1,263	1,192	1,001	799	549	420	31.3	
Louisiana.....	782	564	579	623	709	888	1,042	1,045	1,026	977	775	605	551	52.7	
Maryland.....	532	376	395	424	496	596	662	680	681	664	565	458	387	54.4	
Missouri.....	1,059	680	701	814	1,014	1,206	1,413	1,452	1,469	1,310	1,048	846	755	46.3	
New Jersey.....	621	437	452	512	551	653	788	831	847	789	653	504	435	51.4	
New York.....	1,407	1,034	1,047	1,110	1,233	1,460	1,736	1,782	1,789	1,725	1,566	1,253	1,149	57.8	
North Carolina.....	519	317	324	340	414	627	731	859	729	637	513	376	261	26.9	
Ohio.....	1,277	821	827	861	1,094	1,370	1,725	1,820	1,859	1,612	1,317	1,101	917	44.2	
Oklahoma.....	528	242	247	313	451	570	807	907	899	765	526	335	274	26.7	
Pennsylvania.....	2,124	1,531	1,593	1,720	1,962	2,343	2,767	2,871	2,825	2,531	2,135	1,690	1,500	52.9	
Tennessee.....	927	478	523	592	914	1,116	1,403	1,437	1,417	1,259	820	610	555	33.3	
Texas.....	1,926	1,250	1,278	1,425	1,808	2,202	2,635	2,810	2,761	2,530	1,855	1,365	1,182	42.5	
Virginia.....	714	508	504	548	632	798	918	1,020	949	893	723	555	526	49.2	

Considering the United States as a whole July was the month of maximum employment in the industry, and January was the month of minimum employment at each of the three census periods. For 12 states the maximum is shown for July, and for the remaining 7 it appears for August. In 13 states January was the month of minimum employment; in 5, December; and in 1, February. The greatest degree of fluctuation between the maximum and minimum months is shown for Oklahoma, in which state the number of wage earners employed in January represented only 26.7 per

cent of the number employed in July; and the least fluctuation appears for Florida, the minimum, in February, representing 80.7 per cent of the maximum, in July.

Prevailing hours of labor.—Table 7 presents, for 1914 and 1909, statistics of the average number of wage earners, classified according to number of hours of labor per week prevailing in the establishments in which they were employed, for the United States, and for each of the 19 states in which 500 or more wage earners were employed in 1914.

STATE.	Cen- sus year.	AVERAGE NUMBER OF WAGE EARNERS.							
		Total.	In establishments where the prevailing hours of labor per week were—						
			48 and under.	Be- tween 48 and 54.	54.	Be- tween 54 and 60.	60.	Be- tween 60 and 72.	72. Over 72.
United States.	1914	23,011	548	57	664	2,182	3,741	5,286	8,041
	1909	16,114	305	30	283	965	2,007	1,975	2,128
California.....	1914	1,139	25	2	4	464	314	233	3
	1909	668	32	2	28	102	256	131	1
Florida.....	1914	760	17	2	39	120	44	110	61
	1909	461	13	3	18	36	69	25	87
Georgia.....	1914	890	.....	.....	26	5	42	438	94
	1909	494	.....	.....	.....	.....	58	34	66
Illinois.....	1914	1,312	22	.....	74	446	153	182	35
	1909	804	3	.....	2	242	84	139	75
Indiana.....	1914	926	.....	.....	15	3	276	130	78
	1909	563	4	.....	.....	8	45	70	80
Kansas.....	1914	634	9	.....	21	.....	106	180	47
	1909	593	10	.....	.....	1	65	140	75
Kentucky.....	1914	766	13	3	5	16	52	143	90
	1909	472	.....	.....	9	3	23	22	53
Louisiana.....	1914	782	19	4	.....	6	107	165	71
	1909	633	.....	.....	.....	51	22	68	65
Maryland.....	1914	532	1	.....	31	30	18	121	38
	1909	355	.....	.....	2	.....	52	20	40
Missouri.....	1914	1,059	18	.....	10	83	148	295	61
	1909	761	13	.....	14	147	37	41	508
New Jersey.....	1914	621	16	.....	36	104	87	79	83
	1909	456	.....	.....	10	81	70	79	70
New York.....	1914	1,407	112	15	126	253	272	334	270
	1909	1,124	91	.....	76	65	107	225	28
North Carolina.....	1914	519	.....	.....	15	140	33	159	172
	1909	318	.....	.....	3	71	3	154	87
Ohio.....	1914	1,277	95	7	24	139	311	315	75
	1909	892	8	.....	47	109	140	152	436
Oklahoma.....	1914	528	7	.....	10	16	41	134	46
	1909	449	5	.....	9	40	124	24	247
Pennsylvania.....	1914	2,124	49	5	32	150	378	441	506
	1909	1,606	38	.....	19	229	138	271	842
Tennessee.....	1914	927	3	.....	5	4	50	84	210
	1909	779	2	.....	.....	23	56	87	611
Texas.....	1914	1,926	12	.....	39	75	167	445	280
	1909	1,437	36	16	.....	46	121	97	181
Virginia.....	1914	714	2	.....	16	150	108	30	399
	1909	475	.....	.....	1	3	59	47	147

In 1914, in the United States and in every state for which figures are given in the table, the majority of the wage earners were employed in establishments in which the prevailing hours of labor were at least 60 per week; and in 14 states greater numbers were reported for the class "over 72" than for any other single class. In New York, Ohio, and Georgia the largest numbers were employed in establishments with prevailing hours between 60 and 72, and for Illinois and California the largest numbers were reported for plants in which the prevailing hours were from 54 to 60. These five states are the only ones in which a reduction in the hours of labor appears to have taken place between 1909 and 1914; for the others no substantial change is shown. The unusual length of the working day is due to the nature of the industry. In large establishments two shifts working 12 hours each are employed 6 days in the week.

Character of ownership.—Table 8 shows the number of establishments, average number of wage earners, and value of products, grouped according to the character of ownership of the establishments. The table gives the totals for the United States for 1914 and 1909, and separate totals for 1914 for each state reporting an average of 500 wage earners or more, to-

gether with the per cent distribution of the average number of wage earners and of the value of products.

For the United States as a whole no marked changes in the proportions which the several groups represented of the respective totals took place between 1909 and 1914. In average number of wage earners, value of products, and value added by manufacture, the establishments under corporate ownership show slightly greater proportions, and those under individual ownership slightly smaller ones, for the later year than for the earlier.

In every state the number of establishments under corporate ownership greatly exceeded the number under individual and other forms of ownership combined; and in average number of wage earners and in value of products the predominance of the corporations was still more marked. The greatest proportion of the total average number of wage earners and total value of products reported for establishments under corporate ownership in any state is shown for California, and the smallest for Virginia; but even in the latter state the corporations employed more than two-thirds the total average number of wage earners and made more than three-fourths the total products, as measured by value.

Table 8

Table 8	STATE.	NUMBER OF ESTABLISHMENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.						VALUE OF PRODUCTS.							
					Total.	In establishments owned by—			Per cent of total.			Total.	Of establishments owned by—			Per cent of total.		
		Indi-vid-u-als.	Cor-pora-tions.	All other.		Indi-vid-u-als.	Cor-pora-tions.	All other.	Indi-vid-u-als.	Cor-pora-tions.	All other.		Indi-vid-u-als.	Cor-pora-tions.	All other.	Indi-vid-u-als.	Cor-pora-tions.	All other.
United States:																		
1914.....		456	1,732	355	23,011	1,883	19,519	1,609	8.2	84.8	7.0	\$60,386,267	\$4,448,618	\$51,976,949	\$3,960,700	7.4	86.1	6.6
1909.....		330	1,387	287	16,114	1,471	13,463	1,180	9.1	83.5	7.3	42,953,055	3,495,344	36,701,422	2,756,289	8.1	85.4	6.4
California.....		16	71	8	1,139	29	1,098	12	2.5	96.4	1.1	3,587,334	92,942	3,447,574	46,818	2.6	96.1	1.3
Florida.....		14	66	12	760	58	650	52	7.6	85.5	6.8	2,202,769	138,364	1,919,727	144,678	6.3	87.2	6.6
Georgia.....		20	44	10	890	84	758	48	9.4	85.2	5.4	2,064,984	196,044	1,758,860	110,080	9.5	85.2	5.3
Illinois.....		23	100	5	1,312	122	1,164	26	9.3	88.7	2.0	3,388,802	271,611	3,039,991	77,260	8.0	89.7	2.3
Indiana.....		22	65	19	926	96	723	107	10.4	78.1	11.6	2,029,230	213,747	1,594,513	220,960	10.5	78.6	10.9
Kansas.....		19	66	16	634	52	519	63	8.2	81.9	9.9	1,794,797	159,430	1,507,100	128,267	8.9	84.0	7.1
Kentucky.....		14	68	11	766	73	638	55	9.5	83.3	7.2	1,471,866	126,979	1,261,729	83,158	8.6	85.7	5.6
Louisiana.....		13	58	5	782	78	633	71	10.0	80.9	9.1	1,992,071	170,373	1,657,143	134,555	8.7	84.5	6.9
Maryland.....		16	33	13	532	43	439	50	8.1	82.5	9.4	1,562,983	87,771	1,356,294	118,918	5.6	86.8	7.6
Missouri.....		17	71	29	1,059	73	899	87	6.9	84.9	8.2	3,106,935	179,624	2,739,470	187,861	5.8	88.2	6.0
New Jersey.....		13	52	6	621	74	516	31	11.9	83.1	5.0	1,556,361	222,051	1,277,917	56,393	14.3	82.1	3.6
New York.....		21	82	8	1,407	118	1,223	66	8.4	86.9	4.7	4,896,778	349,030	4,304,090	243,718	7.1	87.9	5.0
North Carolina.....		7	44	10	519	36	462	21	6.9	89.0	4.0	1,125,864	36,500	1,034,878	54,486	3.2	91.9	4.8
Ohio.....		21	91	20	1,277	117	1,117	43	9.2	87.5	3.4	3,134,302	247,685	2,729,927	156,690	7.9	87.1	5.0
Oklahoma.....		10	69	18	528	25	435	68	4.7	82.4	12.9	1,604,146	76,938	1,336,356	190,832	4.8	83.3	11.9
Pennsylvania.....		40	122	27	2,124	136	1,847	141	6.4	87.0	6.6	5,194,493	362,679	4,443,117	388,697	7.0	85.5	7.5
Tennessee.....		3	52	15	927	49	784	94	5.3	84.6	10.1	1,762,193	75,262	1,499,125	187,806	4.3	85.1	10.7
Texas.....		36	179	40	1,926	115	1,676	135	6.0	87.0	7.0	5,328,302	267,097	4,629,499	431,706	5.0	86.9	8.1
Virginia.....		27	49	11	714	166	491	57	23.2	68.8	8.0	1,795,645	286,187	1,364,256	125,202	15.9	77.1	7.0

Classification according to size.—In Table 9 the number of establishments, average number of wage earners, value of products, and value added by manufacture, as reported for 1914 and 1909, are grouped according to size of the establishments as measured by value of output. The per cent distribution for each item is also shown.

Table 9

VALUE OF PRODUCT.	Census year.	Number of establishments.	Average number of wage earners.	Value products.	Value added by manufacture.
All classes.....	1914 1909	2,543 2,004	23,011 16,114	\$60,386,267 42,953,055	\$42,631,263 31,635,557
Less than \$5,000.....	1914 1909	483 403	742 672	1,412,978 1,204,299	939,830 829,666
\$5,000 to \$20,000.....	1914 1909	1,208 973	5,599 4,558	13,100,305 10,748,796	9,122,568 7,881,271
\$20,000 to \$100,000.....	1914 1909	768 587	11,730 8,634	32,338,308 23,741,981	22,658,730 17,469,508
\$100,000 to \$1,000,000.....	1914 1909	79 41	4,940 2,250	13,534,676 7,257,979	9,910,135 5,455,112
Per cent distribution:					
Less than \$5,000.....	1914 1909	19.2 20.1	3.2 4.2	2.3 2.8	2.2 2.6
\$5,000 to \$20,000.....	1914 1909	47.5 48.6	24.3 28.3	21.7 25.0	21.4 24.9
\$20,000 to \$100,000.....	1914 1909	30.2 29.3	51.0 53.6	53.6 55.3	53.1 55.2
\$100,000 to \$1,000,000.....	1914 1909	3.1 2.0	21.5 14.0	22.4 16.9	23.2 17.2

Although the greatest number of establishments—nearly half the total in each year—is shown for the group of establishments having products valued at \$5,000 to \$20,000, the greatest proportions of the total average number of wage earners, value of products, and value added by manufacture—more than 50 per cent in each case and for each year—appear for those with products valued at \$20,000 to \$100,000.

Each of the three groups of establishments having products valued at less than \$100,000 shows smaller proportions of the total average number of wage earners, value of products, and value added by manufacture for 1914 than for 1909.

The average number of wage earners per establishment increased from 8 in 1909 to 9 in 1914; and during the same period the average value of products per establishment increased from \$21,434 to \$23,746, or by 10.8 per cent, and the average value added by manufacture increased from \$15,786 to \$16,764, or by 6.2 per cent.

Table 10 gives, for 1914 and 1909, for the United States as a whole and for each of the 19 states that reported more than 500 wage earners for the later year, a classification of the number of establishments and of the average number of wage earners according to the number of wage earners per establishment.

The establishments for which no wage earners were reported are comparatively small plants in which the work was done by the proprietors or firm members. Some of these establishments employed a few wage earners for a short time but the number was so small and the period of employment so short that in computing the average number, as described in the "Explanation of terms," no wage earners could be shown for the industry.

Nine establishments, distributed throughout eight states, reported more than 100 wage earners each for 1914, as against only 1, in California, for 1909. More than half the establishments in both 1914 and 1909 were in the group of plants employing from 1 to 5 wage earners; but the greatest number of wage earners in each year is shown for the group of establishments employing 6 to 20 wage earners. Nearly 90 per

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cent of the total number of establishments in 1914 were embraced in the two groups of plants employing from 1 to 20 wage earners, while about 65 per cent of

the total number of wage earners in that year were reported by the establishments in the two groups employing from 6 to 50.

Table 10

Table 10	STATE.	Census year.	ESTABLISHMENTS EMPLOYING—												
			TOTAL.		No wage earners.	1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		Over 100 wage earners.	
			Estab-lish-ments.	Wage earners (average number).	Estab-lish-ments.	Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.
United States.....	1914	2,543	23,011	23	1,453	4,168	823	8,929	201	6,024	34	2,217	9	1,673	
	1909	2,004	16,114	12	1,178	3,440	664	7,033	130	4,044	19	1,391	1	206	
California.....	1914	95	1,139	4	42	98	38	392	8	284	2	136	1	226	
	1909	77	666	3	47	109	21	198	5	153			1	206	
Florida.....	1914	92	760		50	165	36	356	4	126	2	113			
	1909	70	461		47	151	19	202	4	108					
Georgia.....	1914	74	890		36	123	28	316	6	168	3	123	1	160	
	1909	61	494		28	87	30	253	2	52	1	72			
Illinois.....	1914	128	1,312	1	67	184	45	494	11	350	4	284			
	1909	83	804		41	120	34	384	6	174	2	126			
Indiana.....	1914	106	926	2	57	166	39	423	7	225			1	112	
	1909	85	563	1	53	157	26	254	5	152					
Kansas.....	1914	101	634	2	67	187	28	325	4	122					
	1909	86	593	2	56	178	24	277	4	138					
Kentucky.....	1914	93	766		60	178	28	288	4	123			1	177	
	1909	78	472		49	132	26	253	3	87					
Louisiana.....	1914	76	782		31	107	37	406	8	269					
	1909	69	633		32	113	29	256	8	264					
Maryland.....	1914	62	532		39	80	17	207	4	109	2	136			
	1909	42	355		23	51	16	204	3	100					
Missouri.....	1914	117	1,059		84	231	23	242	6	206	2	152	2	228	
	1909	92	761		55	147	29	304	7	218	1	92			
New Jersey.....	1914	71	621		32	96	34	363	4	94	1	68			
	1909	59	456		33	102	24	273	1	23	1	58			
New York.....	1914	111	1,407	1	42	124	42	470	24	696	2	117			
	1909	89	1,124		41	138	32	387	14	451	2	148			
North Carolina.....	1914	61	619	1	30	87	24	273	6	159					
	1909	45	318		24	65	20	221	1	32					
Ohio.....	1914	132	1,277	1	75	237	44	466	8	285	4	289			
	1909	97	892		56	166	32	309	7	265	2	152			
Oklahoma.....	1914	97	528	3	64	195	27	259	3	74					
	1909	77	449		53	173	23	250	1	26					
Pennsylvania.....	1914	189	2,124	1	103	296	55	594	26	775	3	176	1	283	
	1909	170	1,606		87	243	65	725	16	491	2	147			
Tennessee.....	1914	70	927		41	115	17	209	11	367			1	236	
	1909	57	779		33	107	12	137	9	274	3	261			
Texas.....	1914	255	1,926	1	162	471	72	801	19	579	1	75			
	1909	182	1,437		104	314	63	652	15	471					
Virginia.....	1914	87	714		47	123	31	321	8	210	1	60			
	1909	74	475		50	130	19	198	5	147					

Engines and power.—Table 11 shows, for 1914, 1909, and 1904, the number and horsepower of each of the several classes of engines and motors used in the manufactured-ice industry, with the per cent distri-

bution of the horsepower; while in Table 17 there is shown, for each state for which separate statistics can be given, the total horsepower of each class of engines and motors for 1914.

Table 11

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
				Amount.			Per cent distribution.		
	1914	1909	1904	1914	1909	1904	1914	1909	1904
Primary power, total.....	7,260	4,635	2,670	461,988	317,789	191,660	100.0	100.0	100.0
Owned.....	5,317	4,297	2,620	429,947	310,211	188,242	93.1	97.6	98.2
Steam engines and turbines ¹	5,013	4,170	2,580	414,685	304,685	186,549	89.8	95.9	97.3
Internal-combustion engines.....	244	82	22	12,535	3,264	618	2.7	1.0	0.3
Water wheels, turbines, and motors.....	60	45	18	2,727	2,262	1,075	0.6	0.7	0.6
Rented.....	1,943	338	50	32,041	7,578	3,418	6.9	2.4	1.8
Electric.....	1,943	338	50	28,991	5,414	1,068	6.2	1.7	0.6
Other.....				3,050	2,164	2,350	0.7	0.7	1.2
Electric.....	4,204	1,140	337	50,546	14,253	4,579	100.0	100.0	100.0
Rented.....	1,943	338	50	28,991	5,414	1,068	57.4	38.0	23.3
Generated by establishments reporting.....	2,261	802	287	21,555	8,839	3,511	42.6	62.0	76.7

¹ Figures for horsepower include for 1909 and 1904 the amount reported under the head of "other" owned power.

The total primary power reported for 1914 represents an increase of 141 per cent as compared with that shown for 1904. Although steam furnishes the bulk of the power used, the proportion which it represented of the total primary power fell from 97.3 per cent in 1904 to 89.8 per cent in 1914. This decrease in relative importance is offset by the increases shown for internal-combustion engines and for rented power (chiefly electric). The increase in electric power, and especially in that derived from motors run by rented current, has been very great, the percentage of increase for all electric power between 1904 and 1909 having been 211.3, and between 1909 and 1914, 254.6. In 1904 only 23.3 per cent of the total electric power was derived from motors using rented current, but in 1914 the corresponding percentage was 57.4. For every state except Rhode Island electric power was reported for 1914 ranging from 54 horsepower in Delaware to 6,327 horsepower in New York.

Fuel.—Anthracite and bituminous coal, coke, oil, and gas were the only kinds of fuel covered by the census inquiry. Table 12 shows, by states, for 1914, the quantities of the several kinds of fuel used in the industry.

Bituminous coal was the most important fuel reported in the industry. Pennsylvania ranked first in

the consumption of this class of fuel, and New York first in the consumption of anthracite coal. Florida used 31.5 per cent of the coke reported, and California and Texas 77.5 per cent of the oil. Texas reported the consumption of 2,608.566 thousand cubic feet of natural gas, which represented 34.4 per cent of the total consumption in the industry.

Table 12

STATE.	COAL.		Coke (tons, 2,000 lbs.).	Oil, including gasoline (barrels).	Gas (1,000 cubic feet).
	Anthracite (tons, 2,240 lbs.).	Bituminous (tons, 2,000 lbs.).			
United States.....	213,541	3,386,275	30,493	1,292,008	7,592,003
California.....	.....	100	.....	588,536	560
Florida.....	1,000	52,533	9,600	40,208	.....
Georgia.....	.....	132,344	.....	14	.....
Illinois.....	.....	322,908	215	178	90
Indiana.....	6	173,110	5,000	109	.....
Kansas.....	.....	77,934	.....	34,734	771,973
Kentucky.....	.....	130,330	.....	225	348,409
Louisiana.....	2,753	99,638	.....	48,973	278,697
Maryland.....	3,395	92,403	766	319	12
Missouri.....	.....	317,521	.....	5,589	108,447
New Jersey.....	63,048	58,547	200	684	.....
New York.....	99,705	240,779	552	3,008	4,097
North Carolina.....	232	30,540	200	93	3,000
Ohio.....	309	230,011	4	315	828,456
Oklahoma.....	.....	48,382	1,056	5,383	833,827
Pennsylvania.....	34,340	365,421	.....	2,654	107,230
Tennessee.....	.....	130,069	.....	71	.....
Other industries.....	.....	240,747	2,022	412,171	2,608,566
Texas.....	1,660	103,482	3,000	205	.....
Virginia.....	.....	513,476	7,778	148,539	1,698,639
All other states.....	7,093	.....	.....	.....	.....

SPECIAL STATISTICS RELATING TO MATERIALS, PRODUCTS, AND METHODS OF MANUFACTURE.

Table 13 shows, for the ice industry proper, and, so far as data are available, for other industries in which ice is made as a subsidiary product, the quantity and cost of ammonia used, the quantity and value of ice produced, the value of "all other products" (chiefly receipts from cold storage and refrigeration), the num-

ber and capacity of ice machines, and the amount of storage space in use.

The figures for ammonia used and for ice and other products relate to 1914, 1909, 1904, and 1899, but those for ice machines and storage space refer only to 1914.

Table 13	1914	1909	1904	1899	1914	1909	1904	1899
QUANTITY AND COST OF AMMONIA USED.					PRODUCTS—continued.			
Ammonia, total cost.....	\$1,887,359	.....	.....	.....	Ice:			
The ice industry.....	\$1,528,975	\$1,021,913	\$613,138	\$359,549	Tons (2,000 pounds).....	21,043,063	14,230,208	8,014,137
Other industries manufacturing ice as a subsidiary product.....	\$358,384	(¹)	(¹)	(¹)	The ice industry.....	18,324,691	12,647,949	7,199,448
Anhydrous—					Other industries.....	2,718,372	1,582,259	814,689
Pounds.....	6,777,617	3,466,284	1,932,497	1,056,535	Value.....	\$62,192,413	\$44,139,053	\$24,350,415
The ice industry.....	5,405,917	(¹)	(¹)	(¹)	The ice industry.....	\$55,258,327	\$39,889,263	\$22,450,503
Other industries.....	1,371,700	(¹)	(¹)	(¹)	Other industries.....	\$6,934,086	\$4,249,790	\$1,899,912
Used in—					By kinds—			
Compressor system.....	6,021,506	(¹)	(¹)	(¹)	Can ice—			
Absorption system.....	756,111	(¹)	(¹)	(¹)	Tons.....	19,635,368	13,177,991	6,665,789
Cost.....	\$1,777,095	.....	.....	.....	The ice industry.....	17,145,599	11,671,547	4,139,764
The ice industry.....	\$1,421,196	\$926,505	\$522,275	\$279,680	Other industries.....	2,489,769	1,506,444	(¹)
Other industries.....	\$355,899	(¹)	(¹)	(¹)	Value.....	\$58,593,861	\$41,123,901	.....
Aqua—all used in absorption systems—					The ice industry.....	\$52,150,488	\$37,085,533	\$21,020,547
Pounds.....	1,971,046	1,670,698	1,495,934	1,323,454	Other industries.....	\$6,443,373	\$4,038,368	\$12,863,160
The ice industry.....	1,927,684	(¹)	(¹)	(¹)	Plate ice—			
Other industries.....	43,362	(¹)	(¹)	(¹)	Tons.....	1,407,695	1,052,217	503,659
Cost.....	\$110,284	.....	.....	.....	The ice industry.....	1,179,092	976,402	154,676
The ice industry.....	\$107,779	\$85,408	\$60,863	\$79,869	Other industries.....	228,603	76,815	(¹)
Other industries.....	\$2,485	(¹)	(¹)	(¹)	Value.....	\$3,598,552	\$3,015,152	\$1,429,956
PRODUCTS.					The ice industry.....	\$3,107,839	\$2,803,730	\$440,714
Total value.....	\$67,320,353	\$47,202,845	\$25,689,957	.....	Other industries.....	\$490,713	\$211,422	(¹)
The ice industry.....	\$60,386,287	\$42,953,055	\$23,790,045	\$13,874,513	All other products, value ¹	\$5,127,940	\$3,063,792	\$1,339,542
Subsidiary products from other industries.....	\$6,934,086	\$4,249,790	\$1,899,912	(¹)	EQUIPMENT. ⁴			
					Machines:			
					Number.....	4,949	.....	.....
					Capacity, tons (per day of 24 hours).....	129,998	(¹)	(¹)
					Storage space, cubic feet:			
					For ice storage.....	100,574,000	.....	.....
					For cold storage.....	82,694,000	.....	.....

¹ Figures not available.

² Includes, for purposes of comparison, products valued at \$93,535 for 12 establishments whose reports were received too late to be included in the general statistics for that year.

³ Chiefly receipts from cold storage and refrigeration, not including, for 1914, income from cold storage to the amount of \$282,331, reported by establishments making ice as a subsidiary product.

⁴ For all establishments manufacturing ice, whether as a primary or a subsidiary product.

The ice made and sold by establishments engaged primarily in the manufacture of other products is an important factor and must be considered in determining the consumption of ammonia and the total production of ice. The consumption of ammonia by, and the equipment of, establishments making ice as a subsidiary product were not shown separately at previous censuses. The quantity and value of the ice made by such establishments were ascertained, however, and are included in the above table.

In the industry proper the cost of ammonia used increased 49.6 per cent during the 5-year period 1909-1914 and 149.4 per cent during the ten years from 1904 to 1914. The average cost of ammonia per pound showed but little variation during the 10-year period 1904-1914. Anhydrous ammonia averaged 27 cents a pound in 1904, 26.7 cents in 1909, and 26.3 cents in 1914, and aqua ammonia 6 cents in 1904, 5.7 cents in 1909, and 5.6 cents in 1914.

The quantity of anhydrous ammonia consumed in the industry proper increased 56 per cent during the 5-year period 1909-1914, and 179.7 per cent between 1904 and 1914. The corresponding percentages of increase in the consumption of aqua ammonia were 15.4 and 28.9, respectively.

Of the total cost of ammonia used in 1914, both in the industry proper and in industries in which ice was made as a subsidiary product, that of anhydrous ammonia represented 94.2 per cent and that of aqua ammonia 5.8 per cent. Of this total, 83.6 per cent was reported by establishments using the compressor system and 16.4 per cent by those using the absorption system. Anhydrous ammonia is used with the compressor system, which was in operation in 1914 in about 82 per cent of all establishments, while aqua ammonia is used chiefly in the absorption system.

Products.—The total value of products given in the table for the ice industry proper includes receipts from cold storage and refrigeration by establishments in the industry itself, but does not include \$282,331 reported as receipts from these sources by establishments in other industries making ice as a subsidiary product.

The value of ice manufactured in the industry proper increased 40.6 per cent between 1909 and 1914, and 153.8 per cent between 1904 and 1914. The percentages of increase in quantity for the same periods were 44.9 and 154.5, respectively. The output of ice reported by establishments manufacturing it as a subsidiary product constituted 12.9 per cent of the total production in 1914.

Can ice represented 93.6 per cent of the total quantity manufactured in the industry proper in 1914, and 91.6 per cent of the total reported by establishments making ice as a subsidiary product.

The value of "all other products"—consisting chiefly of receipts from cold storage and refrigeration—has shown a greater relative increase from census to census than that of the ice made.

Equipment.—Of the total number of machines in use, 3,926, or 79.3 per cent, with a combined capacity of 108,561 tons per day of twenty-four hours, or an average of 27.6 tons per machine, were reported by establishments manufacturing ice as their principal product; and 1,023, or 20.7 per cent, with a combined daily capacity of 21,437 tons, or an average of 21 tons per machine, by establishments making ice as a subsidiary product.

Table 14 shows, for 1914 and 1909, by states, the number of establishments in the ice industry, the number of establishments in other industries, reporting ice as a subsidiary product and the total quantity and value of ice made by each class.

MANUFACTURED ICE.

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Table 14

STATE.	Census year.	NUMBER OF ESTABLISHMENTS MANUFACTURING ICE.			ICE MANUFACTURED.					
		Total.	In ice industry.	In other industries.	Total.		By establishments in the ice industry.		By establishments in other industries.	
					Quantity (tons, 2,000 lbs.).	Value.	Quantity (tons, 2,000 lbs.).	Value.	Quantity (tons, 2,000 lbs.).	Value.
United States.....	1914	3,077	2,543	534	21,043,063	\$62,192,413	18,324,691	\$55,258,327	2,718,372	\$6,934,086
	1909	2,342	2,004	338	14,230,208	44,139,053	12,647,949	39,889,263	1,582,259	4,249,790
Alabama.....	1914	64	55	9	362,774	1,307,818	307,856	1,148,893	54,918	158,925
	1909	52	45	7	234,256	847,582	216,299	775,631	17,957	71,951
Arkansas.....	1914	71	65	6	260,290	1,119,125	246,254	1,059,181	14,036	62,944
	1909	54	49	5	218,924	814,510	210,161	779,364	8,763	35,146
California.....	1914	116	95	21	1,047,941	2,801,304	1,021,559	2,633,426	26,382	167,878
	1909	87	77	10	614,382	1,892,065	593,186	1,803,200	21,196	88,865
Connecticut.....	1914	9	5	4	66,275	188,304	53,410	159,365	12,865	28,939
	1909	10	7	3	59,579	180,315	41,848	141,076	17,731	39,239
District of Columbia.....	1914	13	8	5	272,268	584,633	119,900	283,642	152,368	300,991
	1909	11	7	4	210,015	458,453	161,443	345,643	48,572	112,840
Florida.....	1914	98	92	6	481,158	2,241,031	449,675	2,102,276	31,453	138,755
	1909	71	70	1	290,605	1,239,996	(¹)	(¹)	(¹)	(¹)
Georgia.....	1914	77	74	3	575,595	1,946,568	563,280	1,916,117	12,315	30,451
	1909	67	61	6	363,433	1,196,324	331,708	1,095,388	31,725	100,936
Idaho.....	1914	16	10	6	20,307	119,747	16,594	98,460	3,713	21,287
	1909	7	4	3	8,361	49,924	6,576	39,979	1,755	9,945
Illinois.....	1914	165	128	37	1,460,751	3,659,844	1,283,858	3,289,012	176,893	370,832
	1909	110	83	27	737,168	2,083,676	652,519	1,861,262	84,649	222,414
Indiana.....	1914	130	106	24	734,353	2,089,023	643,622	1,879,178	90,731	209,845
	1909	102	85	17	550,741	1,393,193	462,704	1,188,137	88,037	205,056
Iowa.....	1914	44	34	10	214,232	651,341	188,928	552,076	25,304	99,265
	1909	20	18	2	73,871	266,649	(¹)	(¹)	(¹)	(¹)
Kansas.....	1914	118	101	17	596,831	1,912,032	487,763	1,666,156	109,068	245,876
	1909	99	86	13	443,730	1,426,560	402,685	1,311,156	41,045	115,404
Kentucky.....	1914	107	93	14	459,600	1,406,826	427,662	1,317,550	31,938	89,276
	1909	84	78	6	373,644	1,108,673	337,446	1,024,085	36,198	84,588
Louisiana.....	1914	79	76	3	508,680	1,911,018	590,933	1,879,672	7,747	31,246
	1909	72	69	3	461,134	1,482,938	454,362	1,450,562	6,772	32,346
Maryland.....	1914	68	62	6	552,978	1,494,246	535,737	1,451,238	17,241	43,008
	1909	45	42	3	411,371	1,051,731	394,453	1,020,218	16,918	31,513
Michigan.....	1914	16	11	5	229,901	845,471	178,236	744,353	51,665	101,118
	1909	8	5	3	79,274	179,401	64,549	152,354	14,725	27,047
Mississippi.....	1914	66	58	8	259,741	1,116,537	223,732	973,667	36,009	142,870
	1909	57	51	6	191,506	860,464	180,991	817,093	10,515	43,371
Missouri.....	1914	150	117	33	1,463,066	3,316,290	1,167,077	2,649,853	295,989	666,437
	1909	115	92	23	992,252	2,333,276	849,527	1,978,741	142,725	354,535
Nebraska.....	1914	29	18	11	193,424	568,550	117,464	318,050	75,960	250,500
	1909	8	7	1	37,830	123,341	(¹)	(¹)	(¹)	(¹)
New Jersey.....	1914	76	71	5	648,650	1,524,329	629,763	1,488,740	18,887	35,589
	1909	64	59	5	458,068	1,497,750	439,421	1,440,543	18,647	57,207
New York.....	1914	141	111	30	2,560,005	5,408,204	2,143,681	4,649,480	416,324	758,724
	1909	111	89	22	1,643,339	4,207,641	1,393,327	3,552,942	250,012	654,699
North Carolina.....	1914	68	61	7	266,783	1,119,084	256,568	1,066,550	10,215	52,534
	1909	48	45	3	164,358	655,400	161,358	639,490	3,000	15,910
Ohio.....	1914	193	132	61	1,445,060	3,395,737	1,136,071	2,680,187	308,989	715,550
	1909	151	97	54	1,085,752	2,613,316	806,663	2,065,639	279,089	547,627
Oklahoma.....	1914	104	97	7	366,407	1,636,330	317,507	1,518,395	48,900	117,935
	1909	78	77	1	240,363	1,208,003	(¹)	(¹)	(¹)	(¹)
Oregon.....	1914	44	27	17	88,013	392,860	68,128	300,191	19,885	92,669
	1909	38	25	13	60,176	296,228	40,184	211,507	19,992	84,721
Pennsylvania.....	1914	256	189	67	2,131,521	5,319,716	1,959,742	4,934,429	171,779	385,287
	1909	193	170	23	1,702,377	4,686,747	1,639,936	4,527,085	62,441	159,662
South Carolina.....	1914	39	36	3	188,227	842,639	177,758	807,736	10,469	-34,903
	1909	35	32	3	124,794	446,308	116,394	415,306	8,400	31,002
Tennessee.....	1914	80	70	10	515,844	1,835,148	474,482	1,704,370	41,362	130,778
	1909	61	57	4	341,292	1,347,632	315,838	1,281,710	25,454	65,922
Texas.....	1914	291	255	36	1,388,864	5,805,733	1,149,074	4,981,332	239,790	824,401
	1909	202	182	20	929,479	4,142,793	766,166	3,601,968	163,313	540,825
Virginia.....	1914	95	87	8	481,236	1,663,432	446,047	1,557,065	35,189	106,367
	1909	82	74	8	320,060	1,193,129	286,832	1,080,396	33,228	112,733
Washington.....	1914	58	32	26	194,679	680,566	112,244	431,349	82,435	249,217
	1909	38	25	13	132,513	535,642	111,661	468,835	20,852	66,807
West Virginia.....	1914	61	47	14	255,235	792,300	203,757	661,040	51,478	131,260
	1909	47	35	12	174,366	536,127	127,036	442,314	47,330	93,813
All other states.....	1914	135	120	15	662,374	2,496,627	626,329	2,358,298	36,045	138,329
	1909	117	101	14	501,135	1,780,336	(¹)	(¹)	(¹)	(¹)

¹ Combined to avoid disclosure of individual operations.

The relative importance of the several states in the production of ice, as shown by Table 14 is but little affected by the addition of the ice reported as a subsidiary product of other industries. The total production of the seven leading states in 1914, each of which reported more than 1,000,000 tons for that year, aggregated 11,497,208 tons, or 54.6 per cent of the

total output. The greatest absolute increase for the 5-year period from 1909 to 1914, 916,666, is shown by New York; the next largest, 470,814 tons, by Missouri; and the third largest, 459,385 tons, by Texas.

Method of manufacture.—Table 15 shows, for 1914 and 1904, by divisions and states, the distribution of the number of establishments by systems used.

Table 15	NUMBER OF ESTABLISHMENTS IN THE MANUFACTURED-ICE INDUSTRY.									NUMBER OF ESTABLISHMENTS IN THE MANUFACTURED-ICE INDUSTRY.								
	Total.		Using compressor system solely.		Using absorption system solely.		Using both systems.			Total.		Using compressor system solely.		Using absorption system solely.		Using both systems.		
DIVISION AND STATE.	1914	1904	1914	1904	1914	1904	1914	1904		1914	1904	1914	1904	1914	1904	1914	1904	
United States.....	2,543	1,320	2,077	1,087	417	219	49	13		South Atlantic—Contd.								
New England.....	13	11	12	10	1	1				North Carolina.....	61	32	49	27	9	5	3	
Massachusetts.....	6	1	5	1	1					South Carolina.....	36	18	28	12	4	6	4	
Rhode Island.....	2	3	2	3						Georgia.....	74	48	50	28	23	20	1	
Connecticut.....	5	7	5	6		1				Florida.....	92	47	44	18	46	29	2	
Middle Atlantic.....	371	206	335	189	31	16	5	1		East South Central.....	276	161	163	107	105	50	8	4
New York.....	111	58	100	53	11	5				Kentucky.....	93	48	34	22	55	23	4	3
New Jersey.....	71	39	60	35	11	4				Tennessee.....	70	37	50	31	19	6	1	
Pennsylvania.....	189	109	175	101	9	7	5	1		Alabama.....	55	39	33	25	20	14	2	
East North Central.....	379	179	271	126	97	50	11	3		Mississippi.....	58	37	46	29	11	7	1	1
Ohio.....	132	69	104	54	24	14	4	1		West South Central.....	493	269	447	253	41	15	5	1
Indiana.....	106	66	46	37	53	28	7	1		Arkansas.....	65	38	57	38	7		1	
Illinois.....	128	43	108	34	20	8		1		Louisiana.....	76	62	58	53	18	8		1
Michigan.....	11		11							Oklahoma.....	97	44	91	42	5	2	1	
Wisconsin.....	2	1	2	1						Texas.....	255	125	241	120	11	5	3	
West North Central.....	273	102	246	95	22	7	5			Mountain.....	99	40	93	34	6	6		
Iowa.....	34	4	31	3	2	1	1			Idaho.....	10	1	10	1				
Missouri.....	117	53	106	52	9	1	2			Colorado.....	32	16	29	12	3	4		
Nebraska.....	18	1	16	1	2					New Mexico.....	15	7	13	5	2	2		
Kansas.....	101	44	90	39	9	5	2			Arizona.....	27	13	28	13	1			
Minnesota.....	2		2							Utah.....	10	1	10	1				
South Dakota.....	1		1							Nevada.....	3	2	3	2				
South Atlantic.....	485	266	362	195	112	68	11	2		Montana.....	1		1					
Delaware.....	18	10	18	10						Wyoming.....	1		1					
Maryland.....	62	27	58	26	4					Pacific.....	154	86	148	78	2	6	4	2
District of Columbia.....	8	6	8	6						Washington.....	32	12	31	9	1	3		
Virginia.....	87	48	71	41	15	6	1	1		Oregon.....	27	20	27	20				
West Virginia.....	47	30	36	27	11	2		1		California.....	95	54	90	49	1	3	4	2

¹Includes one establishment using the vacuum system.

Of the establishments engaged primarily in the manufacture of ice for sale in 1914, 81.7 per cent used the compressor system solely, 16.4 per cent used the absorption system solely, and 1.9 per cent used both systems. The percentages of increase between 1904 and 1914 in the number of establishments using the

compressor system and the number using the absorption system were 91.1 and 90.4, respectively. The compressor system predominated in every state in 1914 except Kentucky, Indiana, and Florida, where 59.1 per cent, 50 per cent, and 50 per cent, respectively, of the establishments used the absorption system.

DETAIL STATE TABLES.

Table 16 gives, for 1914, 1909, and 1904, by states, the number of establishments, average number of wage earners, primary horsepower, wages, cost of materials, and value of products, as reported for the ice industry proper, and Table 17 presents, for 1914, by states, more detailed statistics for the industry.

TABLE 16.—COMPARATIVE SUMMARY, BY STATES, FOR 1914, 1909, AND 1904.

STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earners (aver- age num- ber).	Primary horse- power.	Expressed in thousands.			STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earners (aver- age num- ber).	Primary horse- power.	Expressed in thousands.		
					Wages.	Cost of materials.	Value of products.						Wages.	Cost of materials.	Value of products.
United States.....	1914	2,543	23,011	461,988	\$14,841	\$17,755	\$60,386	Mississippi.....	1914	58	476	8,439	\$219	\$327	\$1,046
	1909	2,004	16,114	317,789	9,779	11,317	42,953		1909	51	341	7,003	189	213	866
	1904	1,320	10,101	191,660	5,549	6,011	23,790		1904	37	274	4,171	119	145	603
Alabama.....	1914	55	478	8,200	204	271	1,201	Missouri.....	1914	117	1,059	26,787	748	1,041	3,107
	1909	45	343	6,117	138	201	777		1909	92	761	22,904	472	667	2,084
	1904	39	243	3,784	104	122	532		1904	53	433	13,546	272	399	1,130
Arizona.....	1914	27	203	3,153	186	271	807	Nebraska.....	1914	18	102	1,704	68	121	330
	1909	23	117	2,569	112	144	501		1909	7	30	1,193	21	40	125
	1904	13	72	1,190	55	58	259	Nevada.....	1914	3	9	452	12	21	43
Arkansas.....	1914	65	424	11,052	238	345	1,115		1909	3	14	237	12	12	39
	1909	49	352	8,281	192	207	820	New Jersey.....	1914	71	621	13,658	434	527	1,556
	1904	38	261	4,622	123	106	488		1909	59	456	10,121	317	386	1,497
California.....	1914	95	1,139	20,411	982	926	3,587		1904	39	263	6,677	159	172	648
	1909	77	666	9,971	572	504	2,331	New Mexico.....	1914	15	76	2,115	48	52	232
	1904	54	415	5,788	335	299	1,307		1909	10	50	1,378	33	42	144
Colorado.....	1914	32	231	4,793	181	182	654		1904	7	23	462	20	16	84
	1909	30	251	4,361	190	126	570	New York.....	1914	111	1,407	37,746	1,176	1,667	4,897
	1904	16	138	2,187	93	71	376		1909	89	1,124	21,375	835	1,044	3,808
Connecticut.....	1914	5	86	1,346	64	63	192		1904	58	603	15,958	424	577	1,749
	1909	7	66	1,029	42	43	159	North Carolina.....	1914	61	519	8,329	263	342	1,126
	1904	7	42	780	31	24	121		1909	45	318	5,386	127	180	659
Delaware.....	1914	18	151	1,694	93	59	294		1904	32	235	2,991	83	97	418
	1909	15	71	1,028	31	49	153	Ohio.....	1914	132	1,277	27,978	904	876	3,124
	1904	10	64	705	31	26	142		1909	97	892	19,058	559	584	2,270
Florida.....	1914	92	760	12,475	446	617	2,203		1904	69	520	11,882	296	292	1,217
	1909	70	461	8,585	224	384	1,207	Oklahoma.....	1914	97	528	15,195	353	402	1,604
	1904	47	295	2,943	151	171	684		1909	77	449	10,359	270	307	1,273
Georgia.....	1914	74	890	15,524	454	611	2,065		1904	44	197	5,348	107	121	528
	1909	61	494	8,125	210	275	1,163	Oregon.....	1914	27	106	2,650	92	118	376
	1904	48	399	5,353	142	200	858		1909	25	69	1,569	53	76	257
Idaho.....	1914	10	42	822	38	23	112		1904	20	75	1,416	57	41	217
	1909	4	19	355	14	12	65	Pennsylvania.....	1914	189	2,124	43,937	1,289	1,453	5,195
	1904	4	19	355	14	12	65		1909	170	1,606	35,890	1,023	1,225	4,823
Illinois.....	1914	128	1,312	26,183	970	1,005	3,389		1904	109	1,236	23,576	732	711	2,936
	1909	83	804	13,288	534	442	1,928	South Carolina.....	1914	36	368	5,271	164	266	818
	1904	43	485	6,509	269	247	940		1909	32	218	2,964	85	129	433
Indiana.....	1914	106	926	11,063	553	638	2,029		1904	18	111	1,835	45	75	244
	1909	85	563	7,726	304	326	1,311	Tennessee.....	1914	70	927	13,056	492	405	1,762
	1904	66	391	5,611	199	161	748		1909	57	779	9,327	362	281	1,324
Iowa.....	1914	84	192	3,469	150	202	579		1904	37	382	6,312	191	123	684
	1909	18	151	2,045	101	64	290	Texas.....	1914	255	1,926	42,271	1,138	1,660	5,328
	1904	4	20	784	12	16	51		1909	182	1,437	29,905	839	1,062	3,844
Kansas.....	1914	101	634	17,228	436	507	1,795		1904	125	889	18,453	451	573	2,084
	1909	86	593	14,636	389	342	1,460	Utah.....	1914	10	38	1,505	41	43	228
	1904	44	237	5,569	145	141	585		1909	4	20	474	16	29	93
Kentucky.....	1914	93	766	12,568	350	440	1,472	Virginia.....	1914	87	714	13,057	378	501	1,796
	1909	78	472	9,040	243	307	1,135		1909	74	475	8,553	220	268	1,143
	1904	48	345	8,760	152	139	703		1904	48	346	4,604	138	172	636
Louisiana.....	1914	76	782	12,078	442	676	1,962	Washington.....	1914	32	159	3,080	147	144	551
	1909	69	633	10,556	357	499	1,501		1909	25	143	2,210	140	141	558
	1904	62	458	8,276	236	333	1,100		1904	12	99	905	78	41	243
Maryland.....	1914	62	532	11,463	325	422	1,563	West Virginia.....	1914	47	364	8,380	200	185	756
	1909	42	355	7,192	230	300	1,022		1909	35	233	5,554	113	111	476
	1904	27	253	4,280	126	180	730		1904	30	176	2,764	94	61	353
Massachusetts.....	1914	6	57	2,400	49	76	180	All other states.....	1914	17	163	5,423	125	142	537
	1909	7	55	2,034	42	67	203		1909	16	126	3,432	100	118	442
	1904	7	55	2,034	42	67	203		1904	16	136	3,614	79	101	392
Michigan.....	1914	11	443	4,433	389	128	765								
	1909	5	87	1,959	77	40	199								
	1904	5	87	1,959	77	40	199								

1 Figures can not be shown without disclosing operations of individual establishments.
 * Includes Indian Territory.

MANUFACTURES.

TABLE 17.—DETAIL STATISTICS FOR THE ICE-

STATE.		Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS REPORTED FOR REPRESENTATIVE DAY.						Capital.
			Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.				Total.	16 and over.		Under 16.		
						Male.	Female.	Average number.	Number, 15th day of—		Male.		Female.	Male.	Female.		
									Maximum month.	Minimum month.							
1	United States.....	2,543	29,786	1,355	3,022	1,872	526	23,011	Jy 32,526	Ja 15,144	24,827	24,519	72	236	.....	\$174,308,511
2	Alabama.....	55	642	46	83	30	5	478	Jy 706	Ja 298	572	531	.....	41	.....	2,712,462
3	Arizona.....	27	271	12	32	19	5	203	Jy 283	Ja 146	191	190	.....	1	.....	1,493,979
4	Arkansas.....	65	589	56	72	30	7	424	Jy 708	Ja 227	572	565	.....	7	.....	2,920,490
5	California.....	95	1,415	32	122	94	28	1,139	Au 1,328	Ja 880	1,122	1,121	.....	1	.....	15,985,843
6	Colorado.....	32	311	12	35	25	8	231	Au 338	Ja 159	205	203	1	1	.....	2,497,915
7	Connecticut.....	5	113	2	9	10	6	86	Au 106	Ap 72	82	80	2	.....	.....	799,533
8	Delaware.....	18	196	16	16	9	4	151	Je 249	Ja 90	171	170	1	.....	.....	700,442
9	Florida.....	92	1,021	39	135	73	14	760	Jy 861	Fe 695	739	738	.....	1	.....	4,373,260
10	Georgia.....	74	1,143	42	90	110	11	890	Jy 1,250	Ja 606	966	930	2	34	.....	8,342,247
11	Idaho.....	10	53	2	7	1	1	42	Se 64	Fe 28	35	33	2	.....	.....	477,930
12	Illinois.....	128	1,641	36	166	92	35	1,312	Jy 1,874	Ja 901	1,279	1,279	.....	.....	.....	8,212,344
13	Indiana.....	106	1,223	67	125	74	31	925	Jy 1,383	De 588	903	902	1	.....	.....	4,989,081
14	Iowa.....	34	268	14	37	18	7	192	Jy 305	Ja 88	232	231	1	.....	.....	1,927,992
15	Kansas.....	101	847	55	99	31	28	634	Au 1,019	Ja 304	769	767	2	.....	.....	4,535,236
16	Kentucky.....	93	1,006	37	119	66	18	766	Jy 1,263	Ja 395	754	748	2	4	.....	5,132,590
17	Louisiana.....	76	978	27	90	68	11	782	Jy 1,045	De 551	857	824	.....	33	.....	4,359,554
18	Maryland.....	62	688	46	60	42	8	532	Au 691	Ja 376	599	592	1	6	.....	3,639,369
19	Massachusetts.....	6	65	5	1	2	.....	57	Au 65	Ja 48	53	53	.....	.....	.....	320,966
20	Michigan.....	11	512	1	24	29	15	443	Jy 704	Fe 214	461	461	.....	.....	.....	1,408,771
21	Mississippi.....	58	623	35	64	41	7	476	Je 732	Ja 255	550	529	.....	21	.....	1,855,863
22	Missouri.....	117	1,364	91	119	66	29	1,059	Au 1,469	Ja 680	1,229	1,220	1	8	.....	9,259,634
23	Nebraska.....	18	150	11	20	13	4	102	Jy 166	Ja 48	110	109	1	.....	.....	901,519
24	Nevada.....	3	15	5	1	.....	.....	9	Au 11	Mh 7	9	9	.....	.....	.....	274,285
25	New Jersey.....	71	780	26	87	32	14	621	Au 847	De 435	658	657	1	.....	.....	4,417,538
26	New Mexico.....	15	101	4	13	5	3	76	Au 136	Ja 35	119	119	.....	.....	.....	808,842
27	New York.....	111	1,679	38	129	83	22	1,407	Au 1,789	Ja 1,034	1,505	1,504	1	.....	.....	12,251,127
28	North Carolina.....	61	712	30	91	65	7	519	Jy 859	Ja 317	552	541	8	3	.....	2,736,649
29	Ohio.....	132	1,706	72	167	125	65	1,277	Au 1,859	Ja 821	1,312	1,297	15	.....	.....	10,247,927
30	Oklahoma.....	97	783	60	123	56	16	528	Jy 907	Ja 242	759	751	3	5	.....	3,714,982
31	Oregon.....	27	163	22	21	9	5	106	Au 155	Ja 71	101	101	.....	.....	.....	1,224,047
32	Pennsylvania.....	189	2,667	109	230	148	56	2,124	Jy 2,871	De 1,520	2,300	2,276	17	7	.....	20,618,282
33	South Carolina.....	36	471	15	60	26	2	368	Jy 537	Ja 219	431	424	4	3	.....	1,909,213
34	Tennessee.....	70	1,147	41	93	71	15	927	Jy 1,437	Ja 478	999	994	4	1	.....	4,556,740
35	Texas.....	255	2,553	139	281	190	17	1,926	Jy 2,810	De 1,193	2,070	2,035	.....	35	.....	12,698,125
36	Utah.....	10	60	7	11	2	2	38	Au 52	Mh 25	35	35	.....	.....	.....	919,443
37	Virginia.....	87	941	68	95	55	9	714	Jy 1,020	Ja 502	755	737	.....	18	.....	4,215,294
38	Washington.....	32	223	20	25	17	2	159	Jy 227	Fe 112	162	162	.....	.....	.....	1,808,928
39	West Virginia.....	47	456	13	46	27	6	364	Jy 538	Fe 213	414	408	.....	6	.....	2,550,517
40	All other states.....	17	210	2	24	18	3	163	.....	.....	195	193	2	.....	.....	2,451,552

1 Owned power only.

2 Includes rented power, other than electric.

3 Same number reported for one or more other months.

MANUFACTURED ICE.

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MANUFACTURING INDUSTRY, BY STATES: 1914.

EXPENSES.										POWER.							
Salaries and wages.			For contract work.	Rent and taxes.		For materials.		Value of products.	Value added by manufacture.	Primary horsepower.					Electric horse-power generated in establishments reporting.		
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. ¹	Internal-combustion engines. ²	Water wheels and motor. ¹	Electric (rented).			
\$3,985,753	\$1,719,858	\$14,840,591	\$136,090	\$591,803	\$1,486,180	\$6,414,535	\$11,340,469	\$60,386,267	\$42,631,263	461,988	414,685	15,585	2,727	28,991	21,555	1	
117,968	27,295	204,463	2,240	60	28,666	117,643	153,294	1,201,106	930,169	8,200	7,485	470	-----	245	306	2	
56,114	18,935	185,933	3,892	1,632	15,714	105,719	165,638	807,278	535,921	3,153	2,502	213	-----	438	158	3	
86,817	22,806	238,312	239	19,400	24,288	145,815	199,547	1,114,551	769,189	11,052	10,607	85	-----	360	202	4	
217,397	124,648	982,026	476	15,321	115,802	337,111	588,963	3,587,334	2,661,260	20,411	14,871	448	256	4,836	1,195	5	
51,363	26,144	180,694	-----	13,600	21,595	56,129	125,799	654,429	472,501	4,793	4,626	12	-----	155	156	6	
20,603	11,183	64,225	-----	-----	150	24,977	38,093	191,824	128,754	1,346	1,335	-----	-----	11	140	7	
13,935	5,285	92,603	382	16	3,204	17,032	41,574	233,660	235,054	1,694	1,530	132	-----	32	22	8	
161,946	68,156	446,282	2,890	192,083	43,654	176,147	440,504	2,202,769	1,586,118	12,475	12,108	234	50	83	738	9	
140,974	97,625	454,470	1,706	14,966	50,572	207,639	403,847	2,064,984	1,453,498	15,524	15,303	12	-----	209	474	10	
12,275	1,992	37,683	-----	60	4,097	6,436	16,887	112,440	89,117	822	128	-----	-----	697	-----	11	
221,655	83,889	969,718	3,812	14,553	57,058	367,893	637,529	3,388,862	2,383,440	26,183	20,968	244	125	4,826	1,368	12	
147,893	76,596	553,158	2,511	3,295	39,686	322,857	315,057	2,029,250	1,391,336	11,663	10,968	24	-----	671	194	13	
49,314	18,727	150,198	440	11,022	13,030	66,945	135,382	578,924	376,597	3,469	2,764	85	-----	620	12	14	
121,133	29,030	436,123	4,628	447	50,515	175,767	331,673	1,794,797	1,287,357	17,228	15,780	960	-----	488	485	15	
125,406	46,080	350,262	13,927	1,080	40,269	198,716	241,280	1,471,866	1,031,870	12,568	12,073	363	24	108	414	16	
128,956	67,635	442,236	4,065	716	44,795	282,210	393,896	1,962,071	1,285,965	12,078	11,439	291	-----	348	513	17	
81,613	34,717	324,800	14,852	11,380	31,547	131,020	239,641	1,562,983	1,141,422	11,463	11,267	106	30	60	1,188	18	
1,300	1,701	49,096	76	6,000	3,563	17,661	57,988	180,212	104,363	2,400	1,822	-----	300	278	45	19	
30,048	26,218	389,323	205	1,153	30,565	97,771	331,673	764,956	636,620	4,433	2,310	-----	-----	2,123	86	20	
75,367	33,612	219,247	1,197	2,550	28,808	133,826	193,077	1,045,940	719,037	8,439	8,280	50	54	55	84	21	
158,947	62,238	748,476	15,919	53,724	61,378	370,557	670,608	3,106,895	2,065,730	26,787	25,581	539	-----	667	2,613	22	
22,321	6,026	68,344	255	139	5,847	26,980	93,750	330,467	209,737	1,704	975	240	-----	489	1	23	
1,980	-----	11,598	-----	150	1,097	3,825	16,853	42,717	22,039	452	432	-----	-----	20	68	24	
113,896	34,409	434,368	7,561	7,820	41,388	180,949	366,376	1,556,361	1,029,036	13,658	13,230	290	60	78	598	25	
13,182	2,578	47,694	200	12,100	7,639	43,538	8,542	231,710	179,680	2,115	1,910	50	-----	155	75	26	
221,342	78,251	1,175,542	5,289	146,755	135,562	526,772	1,140,665	4,896,778	3,229,311	37,746	31,870	2,608	16	3,252	3,075	27	
104,161	45,525	263,058	1,000	20,110	30,455	133,868	207,879	1,125,864	784,117	8,329	7,858	53	-----	318	323	28	
223,947	119,661	904,476	5,412	21,653	108,749	290,975	584,934	3,134,302	2,258,393	27,978	26,356	969	-----	653	861	29	
123,594	37,988	353,447	2,196	1,028	49,697	163,558	238,570	1,604,146	1,202,018	15,195	14,063	813	-----	319	560	30	
32,440	9,296	92,488	450	15,919	9,062	35,771	82,563	375,607	257,273	2,650	1,490	-----	-----	248	912	31	
278,011	149,612	1,288,879	17,978	40,731	102,261	546,423	906,611	5,194,493	3,741,459	43,937	40,759	1,889	199	1,090	1,208	32	
80,210	26,780	163,558	1,326	1,400	23,294	115,063	150,472	818,223	552,688	5,271	5,180	6	-----	85	58	33	
131,256	62,357	492,037	930	14,805	38,660	155,440	249,548	1,762,193	1,357,205	13,056	12,446	19	90	501	310	34	
350,723	149,976	1,138,192	19,465	10,677	132,686	545,171	1,114,359	5,328,302	3,668,772	42,271	39,248	2,036	358	629	1,470	35	
17,830	1,030	40,991	-----	980	7,658	8,331	35,086	227,572	184,155	1,505	1,355	-----	40	110	240	36	
127,523	49,873	378,089	-----	23,851	38,342	204,313	296,393	1,795,645	1,294,939	13,057	11,947	100	302	708	1,526	37	
34,420	19,203	146,673	480	6,886	18,850	65,651	78,042	551,429	407,736	3,080	1,004	57	170	1,849	6	38	
52,388	22,725	199,789	61	1,009	17,566	84,429	100,532	755,922	570,961	8,380	7,753	532	-----	95	68	39	
35,505	20,056	122,140	30	3,705	27,223	44,709	96,220	537,405	396,476	5,423	2,945	1,655	406	418	579	40	

*All other states embrace: Minnesota, 2 establishments; Montana, 1; Rhode Island, 2; South Dakota, 1; Wisconsin, 2; Wyoming, 1; and the District of Columbia, 8.